436-12

ENGLISH BOTANY;

OR,

COLOURED FIGURES

OF

BRITISH PLANTS,

WITH THEIR

ESSENTIAL CHARACTERS, SYNONYMS, AND PLACES OF GROWTH.

TO WHICH WILL BE ADDED,

OCCASIONAL REMARKS.

BY

JAMES SOWERBY, F.L.S.

VOL. III.

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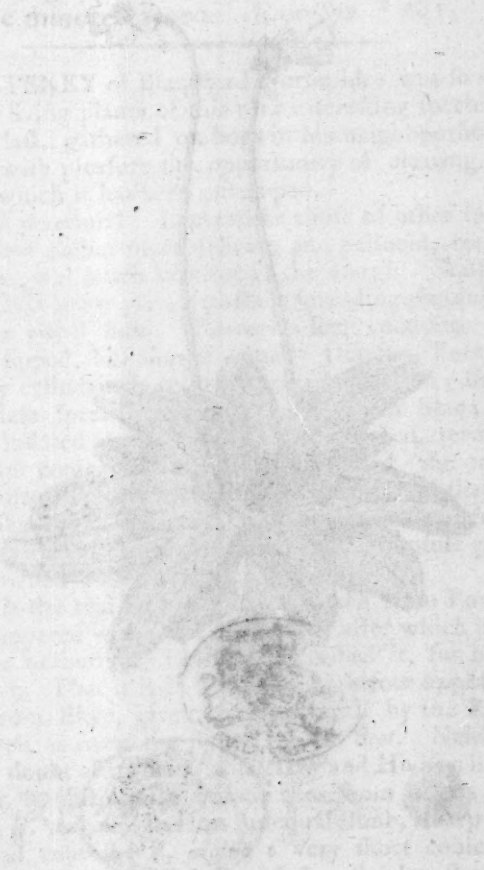
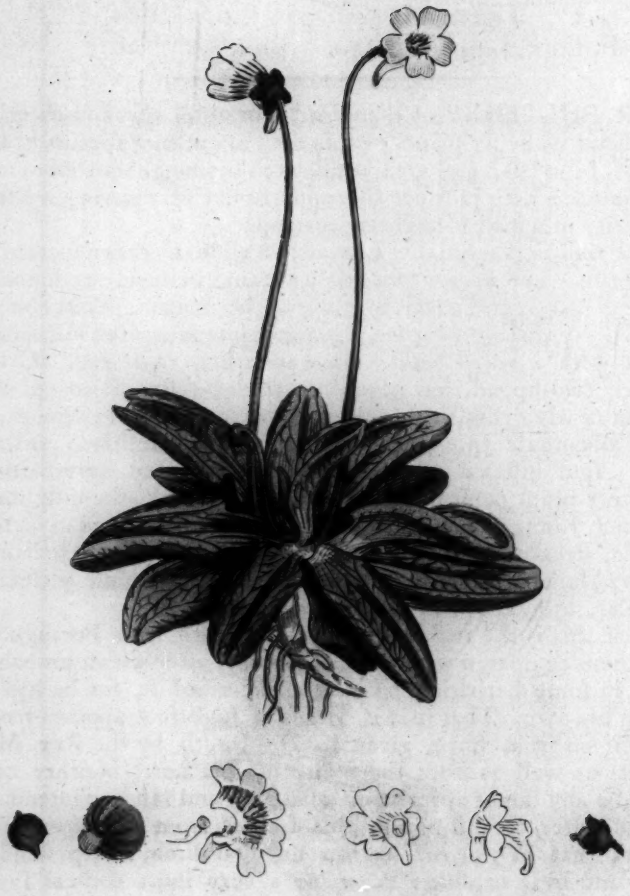
G.R. III.
BRITISH MUSEUM





T. Curtis del. Dec. 1 1793.

PINGUICULA lusitanica.

Pale Butter-wort.

DIANDRIA Monogynia.

GEN. CHAR. *Cor.* ringent, spurred. *Cal.* two-lipped, with five segments. *Capsule* of one cell.

SPEC. CHAR. Nectary blunt, shorter than the petal. Stalk hairy. Capsule globose.

SYN. Pinguicula lusitanica. *Linn. Sp. Pl.* 25. *Hudſ. Fl. An. ed.* 1. 7.

P. villosa. *Hudſ. Fl. An. ed.* 2. 8. *With. Bot. Arr.* 17. *Lightf. Fl. Scot.* 77. *t.* 6.

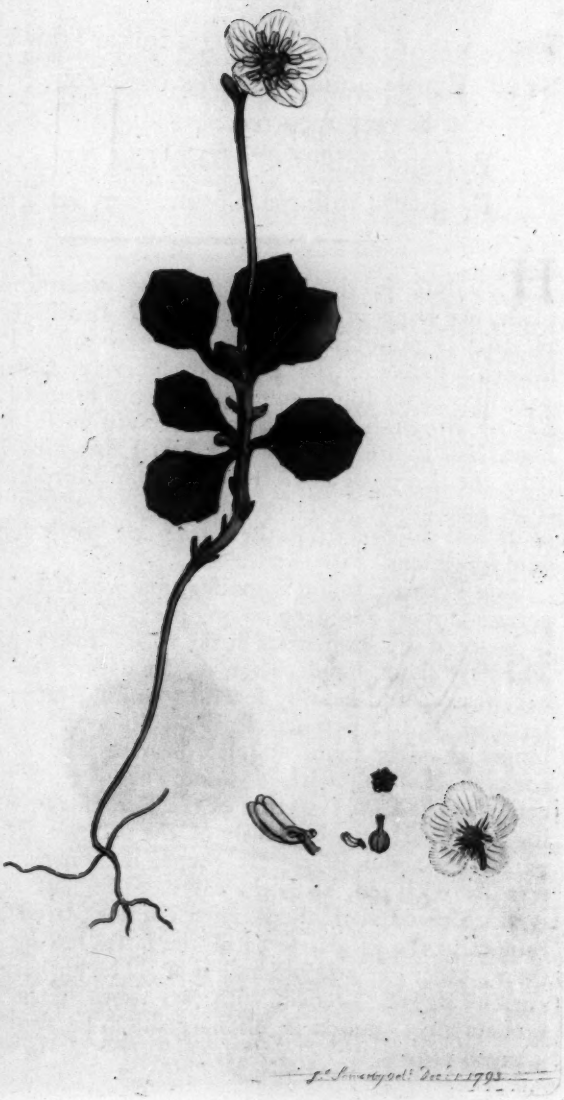
P. flore minore carneo. *Raii Syn.* * 281.

DR. PULTENEY of Blandford Dorsetshire was so obliging as to send us living plants of this very interesting species in the end of June last, gathered on bogs in his neighbourhood, and we embrace with pleasure the opportunity of clearing up that obscurity in which it has been enveloped.

The root is perennial. Leaves like those of other species of this genus, but rather more delicate and pellucid, reticulated with red veins, and much involute in the margin. Stalks hairy, especially in their lower part, with short spreading glandular hairs tipped with a viscid fluid. Flowers a little nodding. Calyx scarcely two-lipped, but almost equally 5-cleft. Tube of the corolla nearly cylindrical, yellow streaked with red; limb in 5 equal obcordate spreading segments, of a pale lilac; orifice hairy; spur inflated at the base, then contracted, terminating in a very blunt conical figure, and when dried (the only state in which Linnæus saw it) much thicker at the end than at the middle, streaked with red. Stamina flattish. Germen hairy. Stigma blunt, excavated on the upper side. Capsule perfectly globular, crowned with the withered stigma.

That this is the real P. lusitanica we learn from Portuguese specimens compared with those of Grisley, after which probably (seen in some herbarium) Linnæus described it, for he had it not in his own. That it is P. villosa of Lightfoot appears from a specimen from Skye, given to Dr. Smith by the Rev. Mr. Stuart, as well as from the figure in *Flo. Scot.* Neither can there be any doubt of its being what Ray and Hudson intended.

The better to distinguish this species from others we may remark that P. *vulgaris* has an unequal limb, sharp slender spur, and oval capsule: P. *alpina* a very short conical spur, and a long rostrated capsule: P. *villosa* a slender sharp spur, and obcordate compressed capsule, with short round leaves. Its hairy stalk and regular limb agree nearly with P. *lusitanica*, but the *villosa* is the smaller in all its parts.



PYROLA uniflora.

Single-flowered Winter-green.

DECANDRIA Monogynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Capſule* 5-celled, burſting at the angles.

SPEC. CHAR. Stalk bearing a ſolitary flower.

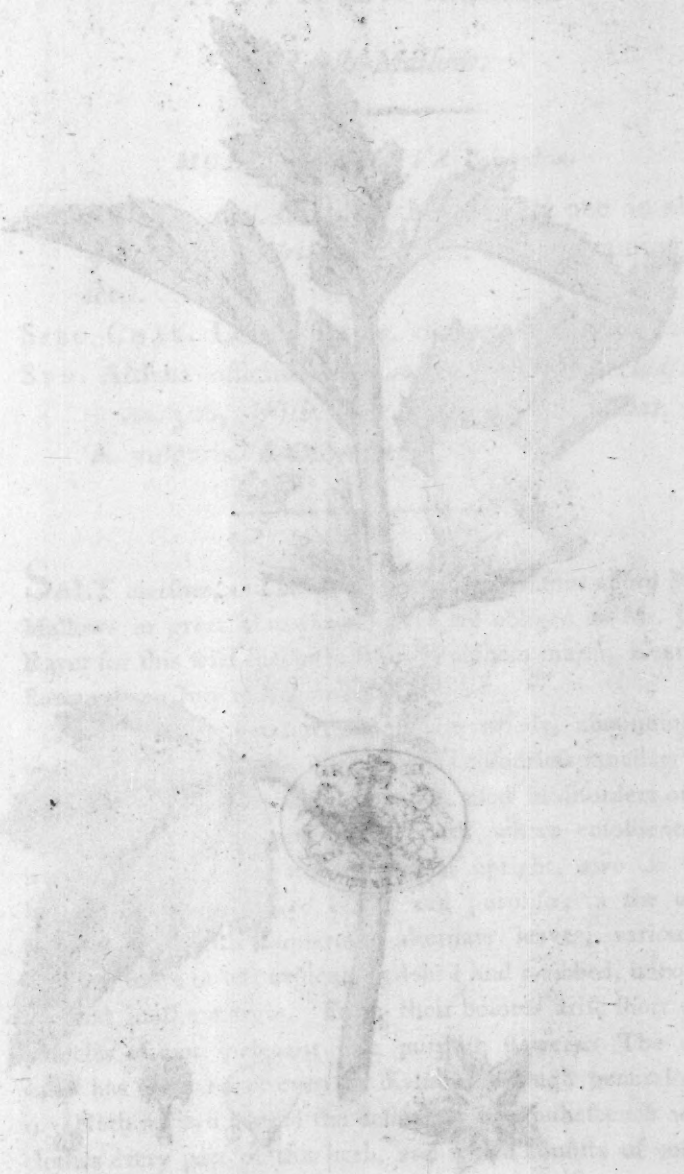
SYN. Pyrola uniflora. *Linn. Sp. Pl.* 568. *Fl. Dan. t.* 8. very incorrect.

P. ſcapo unifloro. *Hall. Hiſt.* 1011.

P. quarta minima Cluſii. *Ger. em.* 408.

HAVING in the preceding page determined an obſcure plant, we hope in this to afford the Britiſh botaniſt no leſs pleaſure in preſenting him with a new one. Pyrola uniflora, though a native of the Lapland, Norway, German and Swiſs alps, was never ſuppoſed to grow in our iſland till James Brodie Eſq. of Brodie-houſe in Scotland found it in that neighbourhood laſt ſummer, when alſo Mr. James Hoy F. L. S. ſent it to the Linnean Society from near Gordon Caſtle. Both theſe gentlemen we believe are equally entitled to the honour of its firſt diſcovery; to the former we are indebted for recent wild ſpecimens.

This Pyrola is found in moiſt alpine woods: its long branched perennial roots run deep among the moſs, which in ſuch places is watered by numerous little rills. Every part is ſmooth. The ſtem ſhort, ſimple, angular, ſet with a few alternate concave ſcales, and bearing ſeveral roundiſh, more or leſs obtuſe, ſerrated, veiny, petiolate leaves. Stalk terminal, erect, much longer than the ſtem, angular, bearing ſeldom more than one concave bractea, with a ſolitary flower of great elegance, compared by Cluſius to that of the Parnaſſia (t. 82), and poſſeſſing all the fragrance of Lily of the valley. This flower is in perfection about July. Its corolla is ſometimes ſtreaked externally with red, as is the calyx. Linnæus and Haller have well obſerved that the ſtamina are not placed regularly with reſpect to the petals, ſome of the latter having 3 ſtamina next them, others 2, and others but 1. The antheræ are of a moſt curious figure, 4-lobed, with two tubes at the baſe by which probably the pollen is diſcharged. The ſtigma reſembles a 5-rayed crown.



J.T. Sowerby delt Dec.r 1793.

ALTHÆA officinalis.

Marſh Mallow.

MONADELPHIA Polyandria.

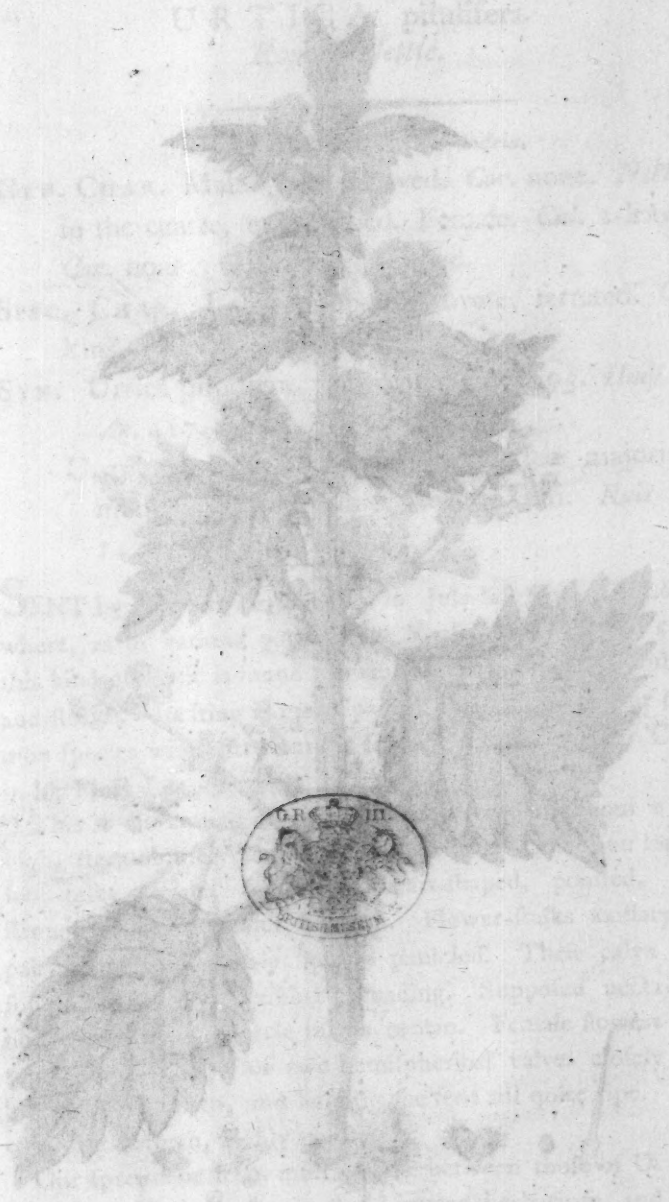
GEN. CHAR. *Cal.* double; the external one in about 9 ſegments. *Arilli* numerous, each containing one ſeed.

SPEC. CHAR. Leaves ſimple, downy, ſlightly 5-lobed.

SYN. Althæa officinalis. *Linn. Sp. Pl.* 966. *Hudſ. Fl. An.* 306. *With. Bot. Arr.* 735. *Relh. Cant.* 264. A. vulgaris. *Raii Syn.* 252.

SALT marſhes, and banks of ditches in the fens afford Marſh Mallows in great abundance. We are obliged to Mr. Jacob Rayer for this wild ſpecimen from Woldham marſh, Kent. It flowers from July to September.

The roots are perennial, long and woody, abounding (as well as the herb) with a pure taſteleſs colourleſs mucilage, for which reaſon its decoction is much uſed in diſorders of the kidneys or bladder, and in all caſes where emollients are wanted. The ſtems are numerous, upright, two or three feet high, round, naked below and purpliſh; in the upper part covered with numerous alternate leaves, various in breadth, more or leſs evidently 5-lobed and 5-ribbed, unequally ſerrated in the margin. From their boſoms ariſe ſhort denſe panicles of not inelegant pale purpliſh flowers. The outer calyx has often 10 or even 12 diviſions, though generally but 9. Nothing can exceed the delicately ſoft pubeſcence which clothes every part of this herb, and which conſiſts of minute ſtarry hairs entangled with each other.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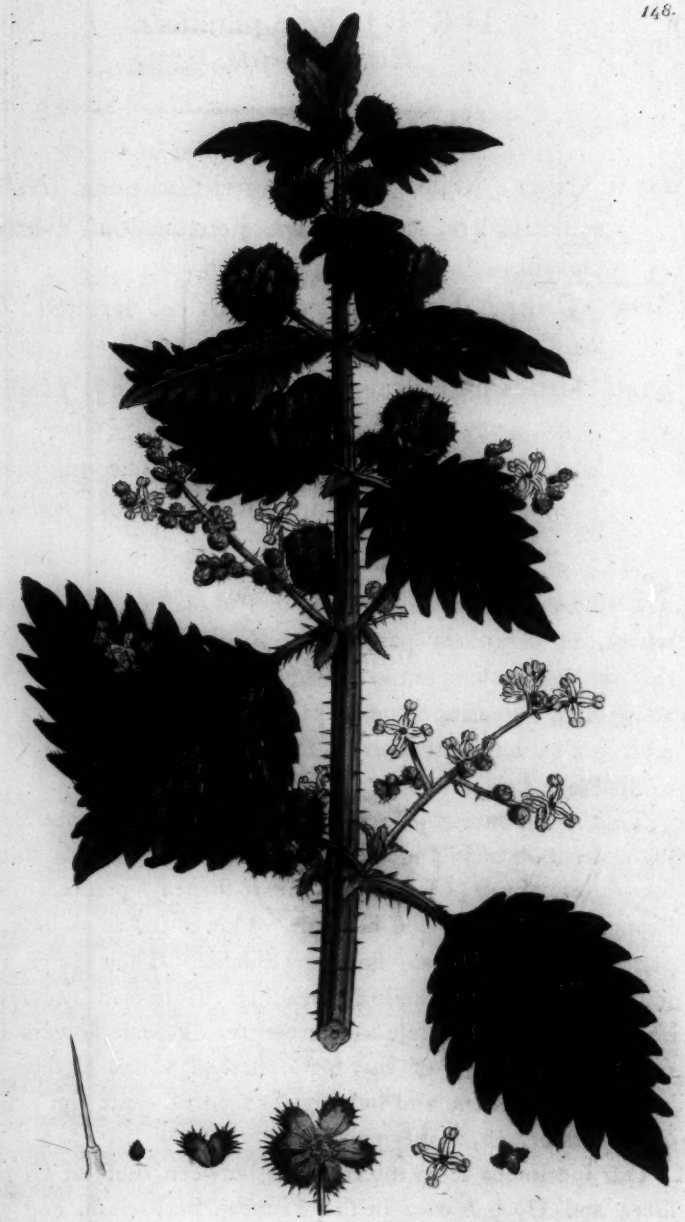


J. Sowerby del.t Dec.r 1793.

URTICA pilulifera.
Roman Nettle.

MONOECIA Tetrandria.

GEN. CHAR. Male. *Cal.* 4-leaved. *Cor.* none. *Nectary* in the centre, cup-ſhaped. Female. *Cal.* 2-leaved. *Cor.* none. *Seed* one, poliſhed.

SPEC. CHAR. Leaves oppoſite, ovate, ſerrated. Catkins of fruit globoſe.

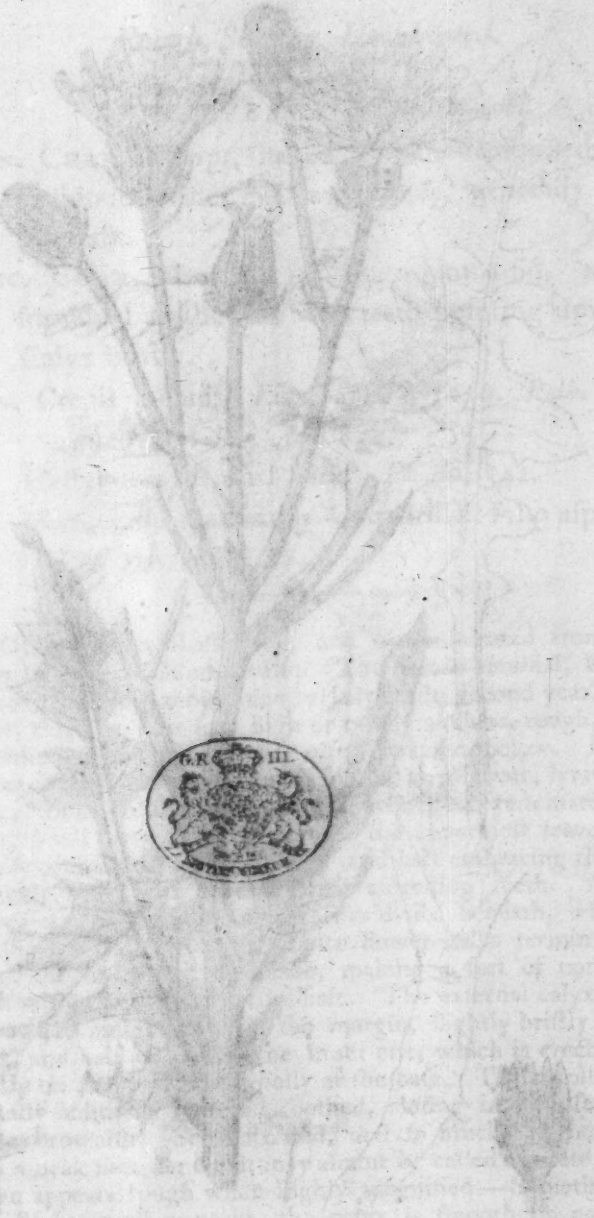
SYN. Urtica pilulifera. *Linn. Sp. Pl.* 1395. *Hudſ. Fl. An.* 417. *With. Bot. Arr.* 1070.

U. pilulifera, folio profundius Urticæ majoris in modum ſerrato, ſemine magno lini. *Raii Syn.* 140.

SENT by Dawſon Turner Eſq. in July laſt from Yarmouth, where, as in various parts of the Norfolk and Suffolk coaſt, this kind of nettle is found growing abundantly among rubbiſh and ſtones. Its ſting is more painful than either of our common ſpecies whoſe ſtructure is ſo well illuſtrated by Mr. Curtis in his Flora Londinenſis.

This is an annual of very luxuriant growth, about 2 feet high, ſtem obtuſely angular, often purple. Leaves on longiſh foot-ſtalks, ovate, ſometimes heart-ſhaped, pointed, very ſtrongly ſerrated, paler beneath. Flower-ſtalks axillary, in pairs, thoſe of the male flowers panicled. Their calyx is of four equal leaves. Stamina ſpreading. Suppoſed nectary an obſolete concave tubercle in the centre. Female flowers in a round head. Calyx of two hemiſpherical valves cloſely embracing the germen, and holding the ſeed till quite ripe. Seed oval, dark brown, highly poliſhed.

Our ſpecimens ſeem intermediate between thoſe of U. pilulifera and U. balearica in the Linnean herbarium, and notwithſtanding the opinion of Profeſſor Murray (ſee *Withering*) we believe theſe ſpecies not to be diſtinct. U. Dodartii appears different enough from both.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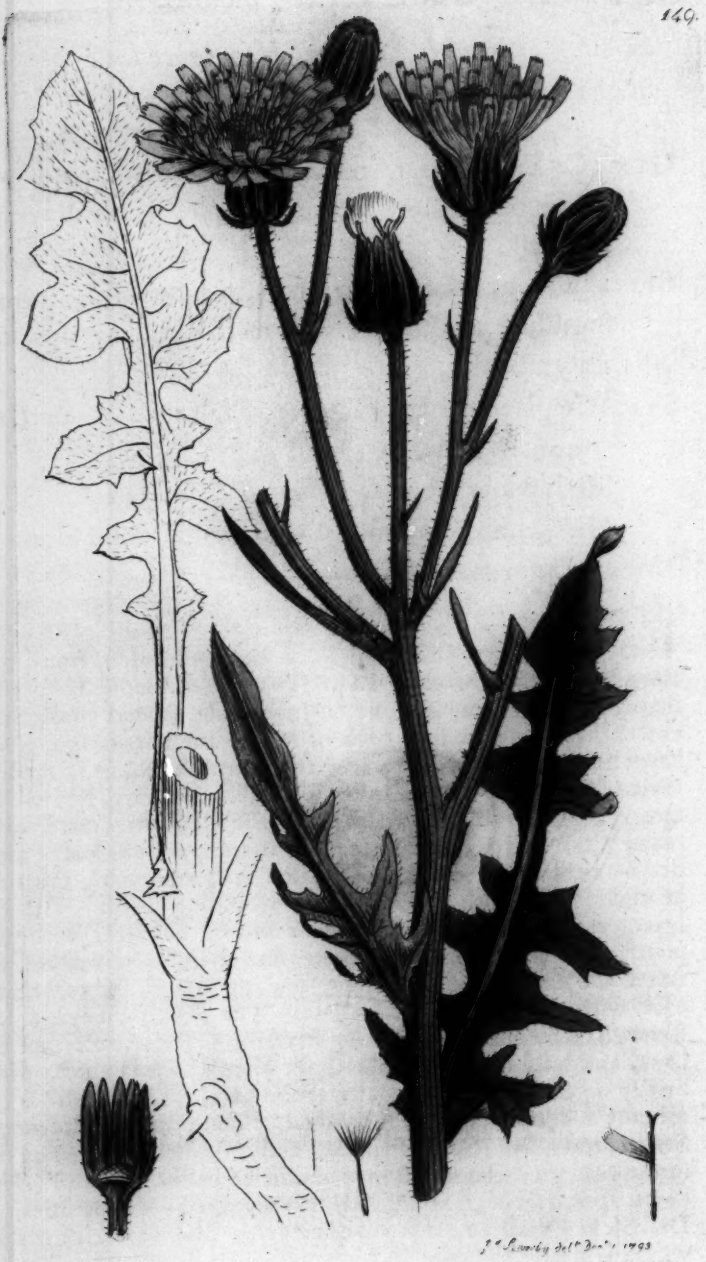


Jno Sowerby del.t Dec.r 1793

CREPIS biennis.

Rough Succory Hawkweed.

SYNGENESIA Polygamia-æqualis.

GEN. CHAR. *Recept.* naked. *Calyx* ſurrounded with deciduous ſcales. *Down* ſimple, generally on a footſtalk.

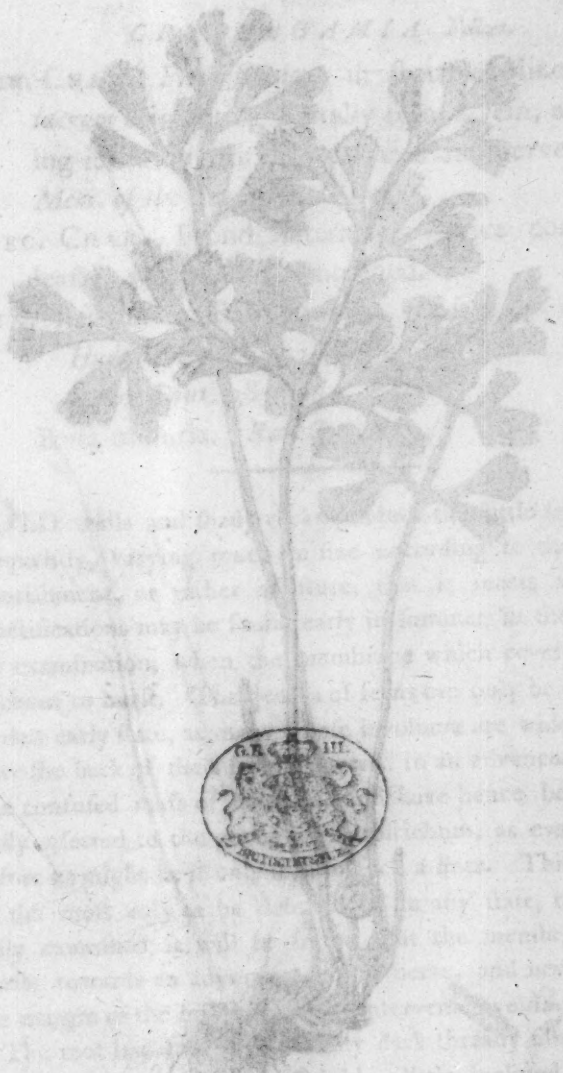
SPEC. CHAR. Leaves runcinato-pinnatifid, rough, furniſhed at the baſe with teeth pointing upwards. Calyx briſtly.

SYN. Crepis biennis. *Linn. Sp. Pl.* 1136. *Relh. Cant.* 296. *With. Bot. Arr.* 855.

Hedypnois biennis. *Hudſ. Fl. An.* 342.

Hieracium maximum Chondrillæ folio aſperum. *Raii Syn.* 166.

FOUND in a chalky ſoil, and communicated from near Bury by William Mathew Eſq. The root is biennial, ſpindle-ſhaped, flowering about June or July of the ſecond year. Stem erect, three or four feet high or more, angular, rough, leafy, branched in the upper part, often purpliſh below. Radical leaves ſeveral, on long purpliſh footſtalks, obovate, lyrato-dentate; thoſe on the lower part of the ſtem runcinate, with many ſmall ſharp ſcattered teeth; the uppermoſt leaves more deeply pinnatifid, ſeſſile, dilated and half embracing the ſtem at their baſe, with ſeveral ſharp aſcending teeth. All the leaves are rough, eſpecially their mid-ribs beneath, with projecting briſtles. Many alternate flower-ſtalks terminate the ſtem, the lowermoſt branched, making a ſort of corymbus, each with a linear leaf at its baſe. The external calyx is lax, ſomewhat membranous in the margin, ſlightly briſtly on the back, and half as long as the inner one, which is erect, more briſtly on the back, and woolly at the baſe. The corolla is externally reddiſh. Florets 5-toothed, cloſing in the afternoon. Styles browniſh. Seeds ſtriated, and ſo much lengthened out into a beak that the down may almoſt be called ſtipitate. This down appears rough when highly magnified.—Sometimes, as Dr. Stokes well remarks, the calyx is ſmooth or nearly ſo, which is partly the caſe in Linnæus's own Scanian ſpecimens.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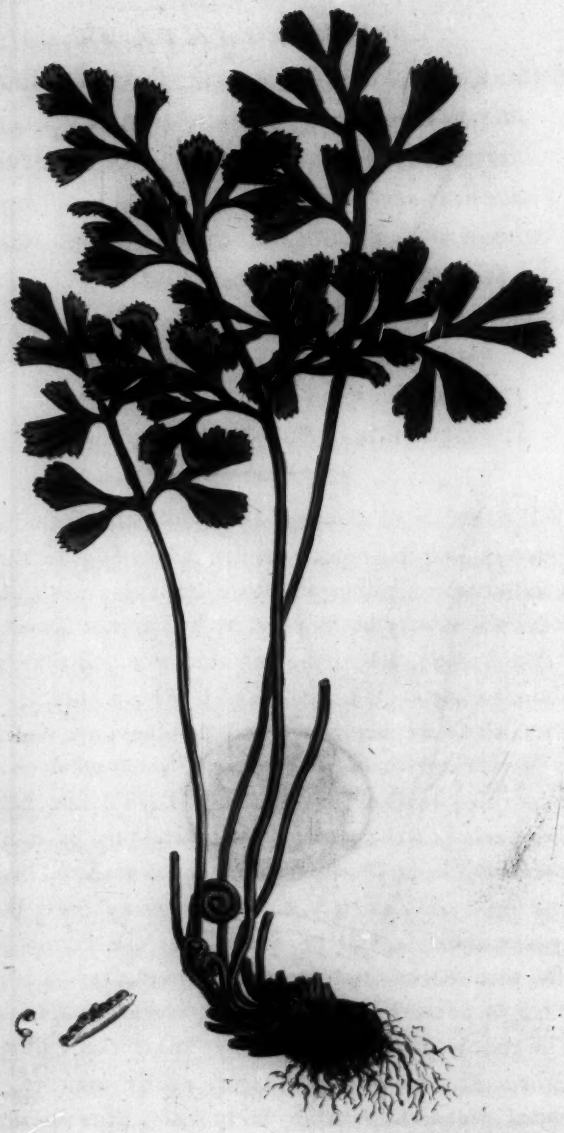


ASPLENIUM Ruta-muraria.

White Maiden-hair or Wall-rue.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructifications* in ſcattered lines. *Involucrum* originating laterally from a vein, and burſting inwardly (that is towards the nerve). *Smith Mem. of the Turin Acad. Vol.* 5.

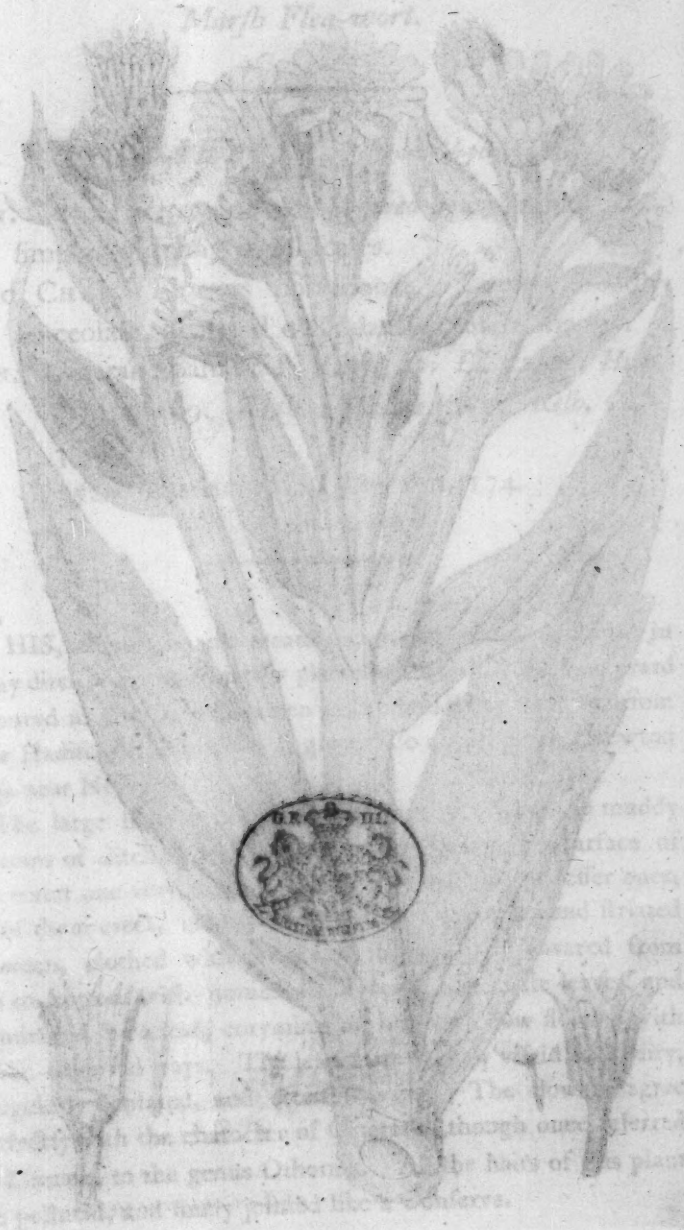
SPEC. CHAR. Frond alternately twice compound; leaflets wedge-ſhaped notched.

SYN. Aſplenium Ruta-muraria. *Linn. Sp. Pl.* 1541. *Hudſ. Fl. An.* 453. *With. Bot. Arr. V.* 3. 53. *Relh. Cant.* 389.

Ruta muraria. *Raii Syn.* 122.

OLD walls and ſhady rocks produce this little fern not unfrequently, varying much in ſize according to the degree of nouriſhment, or rather moiſture, that it meets with. The fructifications may be found early in ſummer in the beſt ſtate for examination, when the membrane which covers each line is about to burſt. The genera of ferns can only be determined in that early ſtate, as many whoſe involucra are widely different have the back of their fronds covered in an advanced ſtate with one confuſed maſs of capſules, and have hence been erroneouſly referred to the genus of Acroſtichum, as even the plant before us might be if only ſeen in ſuch a ſtate. This is not one of the moſt eaſy to be determined in any ſtate, but if carefully examined it will be found that the membrane always burſts towards an adjoining vein or nerve, and never towards the margin of the leaf without an intervening vein.

The root is perennial, of many dark thready fibres. Stalks upright. Fronds thick and rigid, a little inclined, of a dark glaucous green, ſmooth in every part. Involucrum notched in the margin.



J. Sowerby del. et sc. 1795

CINERARIA paluſtris.

Marſh Flea-wort.

SYNGENESIA Polygamia-ſuperflua.

GEN. CHAR. *Receptacle* naked. *Seed down* ſimple. *Cal.* ſimple, of many equal ſcales.

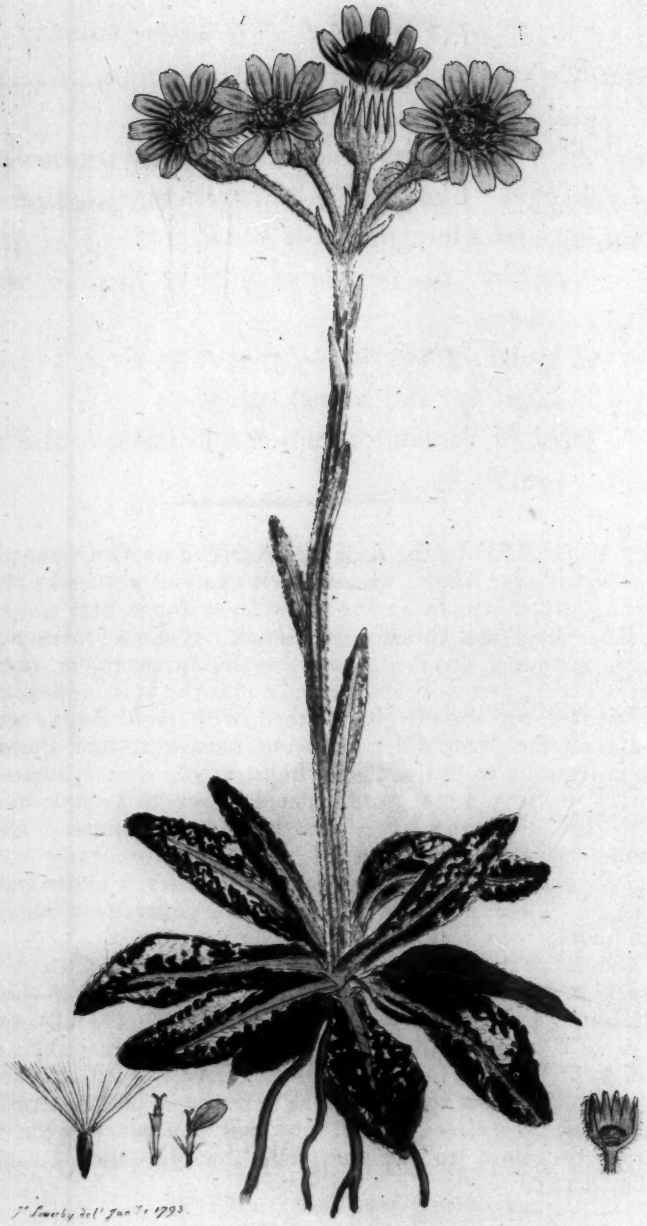
SPEC. CHAR. Flowers corymboſe. Leaves broadly lanceolate, dentated or ſinuated. Stem ſhaggy.

SYN. Cineraria paluſtris. *Linn. Sp. Pl.* 1243. *Hudſ. Fl. An.* 369. *With. Bot. Arr.* 919. *Relh. Cant.* 320.

Conyza foliis laciniatis. *Raii Syn.* 174.

THIS, though by no means a common plant, is found in many ditches and wet marſhy places in the fens. Mr. Woodward favoured us with this ſpecimen in the middle of June laſt from near Hadiſcoe in Norfolk; it grows alſo on St. Faith's Newton bogs near Norwich.

The large fibrous perennial root runs deep into the muddy bottoms of ditches, and throws up high above the ſurface of the water one very ſtout principal ſtem, with a few leſſer ones, all of them erect, unbranched, with many angles and ſtriated between, clothed with thick ſoft ſhaggy hair, covered from top to bottom with numerous alternate lanceolate leaves, and terminated by a leafy corymbus of bright yellow flowers with lemon-coloured rays. The leaves are ſlightly viſcid and hairy, irregularly dentated, and often ſinuated. The flowers agree perfectly with the character of Cineraria, though once referred by Linnæus to the genus Othonna. All the hairs of this plant are pellucid, and finely jointed like a Conſerva.



J.t Sowerby del.t Jan.y 1793.

CINERARIA integrifolia.

Mountain Flea-wort.

SYNGENESIA Polygamia-ſuperflua.

GEN. CHAR. *Recept.* naked. *Down* ſimple. *Cal.* ſimple, of many equal ſcales.

SPEC. CHAR. Leaves oblong, obſoletely denticulated, ſhaggy. Flowers in a ſimple involucrated umbel.

SYN. Cineraria integrifolia. *With. Bot. Arr.* 920. *Murr. Syſt. ed.* 14. (β pratenſis) 765. *Jacq. Fl. Auſtr. t.* 180.

C. alpina. *Hudſ. Fl. An.* 370. *Relh. Cant.* 320. *tab. Linn. Sp. Pl.* (var. *γ*) 1243.

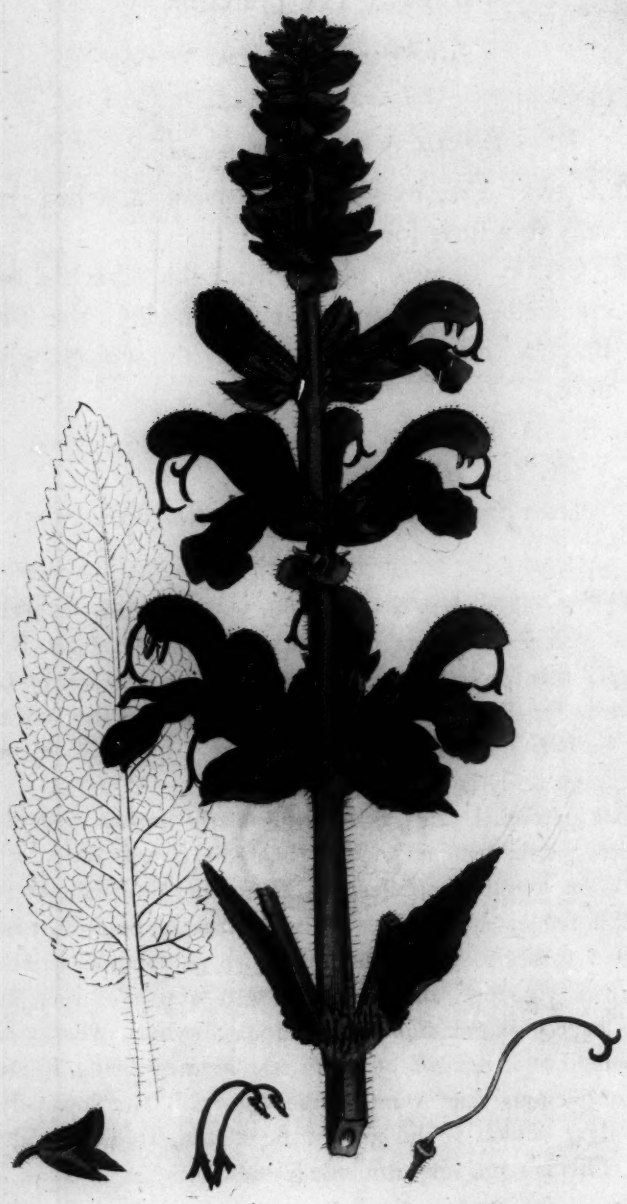
Jacobæa Pannonica folio non laciniato. *Raii Syn.* 178.

GATHERED by the Rev. Mr. Hemſted on Gogmagog hills and Newmarket heath, where, as on many other chalky downs of England, this plant is to be found flowering in May and June.

Root long and thready, perennial. Radical leaves numerous, ſpreading on the ground, ovate, ſpatulate, or obovate occaſionally, generally lengthened out at the baſe, reflexed and denticulated in the margin, clothed with looſe ſhaggy wool; thoſe on the ſtem differ in being narrower, and alternate. Stem from ſix to twelve inches high, erect, ſimple, furrowed, woolly, bearing a few pedunculated flowers in a ſimple umbel, with an involucrum of a few lanceolate, pointed, almoſt naked, leaves. The ſcales of the calyx are nearly naked, and have a membranous margin. Seeds hairy. Down ſimple, roughiſh. The florets of the radius are generally broadeſt in the middle, or nearly oval.

Cineraria alpina *α Linn. Sp. Pl.* is Senecio alpinus of the *Suppl. p.* 371, a very different plant, whoſe hiſtory in the laſt mentioned place is terribly confuſed, No. 67 of Haller being Senecio Doronicum, and No. 68 our Cineraria integrifolia. No. 63 of Haller is (according to Mr. Davall) its true ſynonym.

Our plant never approaches the appearance of C. integrifolia *α*, alpina, *Murr.* & *Jacq.* t. 179, nor can we ſuppoſe that variety to belong to any thing elſe than Jacquin's C. longifolia, t. 181.



T. Sowerby del. Jan.y 1. 1793.

SALVIA pratenſis.

Meadow Clary.

DIANDRIA Monogynia.

GEN. CHAR. *Cor.* irregular. *Filaments* attached laterally to a little footſtalk.

SPEC. CHAR. Leaves oblong, heart-ſhaped at the baſe, crenated; the uppermoſt embracing the ſtem. Bracteæ minute. Summit of the corolla glutinous.

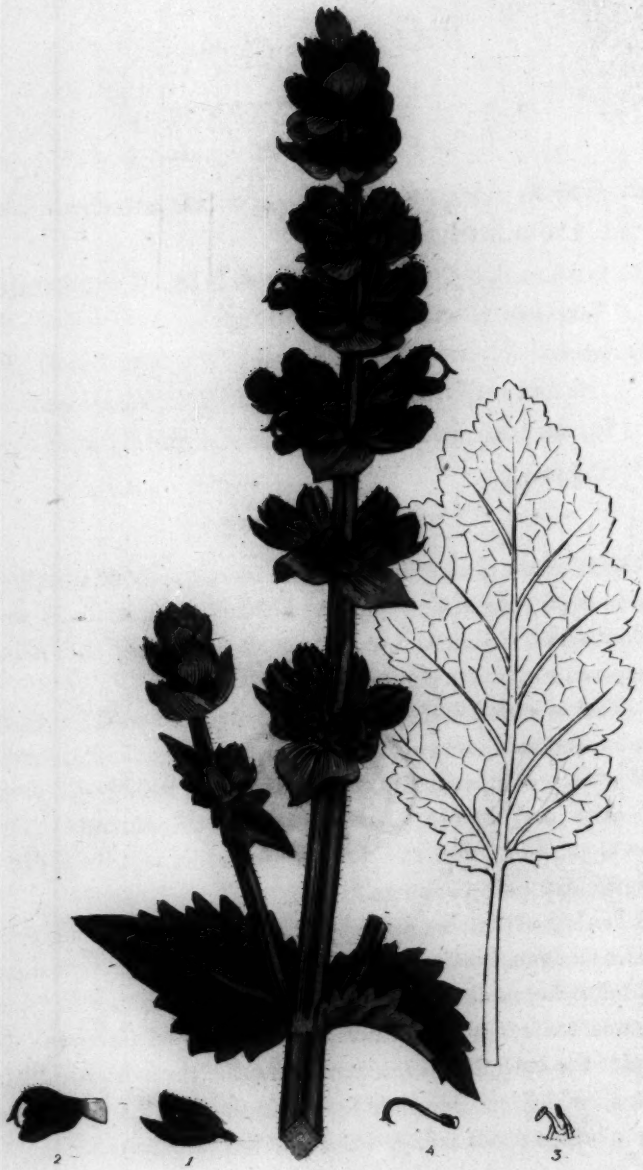
SYN. Salvia pratenſis. *Linn. Sp. Pl.* 35. *Hudſ. Fl. An.* 10. *With. Bot. Arr.* 21.

Sclarea pratenſis foliis ſerratis. *Raii Syn.* 237.

THE meadow clary is one of our more ſpecious, as well as of our moſt ſcarce plants of Britiſh growth. Mr. Jacob Rayer gathered this ſpecimen near Cobham in Kent, the ſeat of Lord Darnley. Dr. Stokes mentions it as common in Surry and Suſſex; we have had it too from Oxfordſhire. It flowers in June, and cannot eaſily be overlooked.

Root perennial. Leaves oblong, nearly ſmooth, irregularly crenated, wrinkled and veiny; the radical, and lower ſtem-leaves, on longiſh footſtalks, and ſometimes ſinuated; the uppermoſt ſeſſile, embracing the ſtem, ſharply pointed. Long whorled ſpikes of large blue flowers (6 of them in a whorl) terminate the ſtem and branches, with a pair of very ſmall heart-ſhaped, acuminated bracteæ to each whorl, whence Linnæus defines it *verticillis ſubnudis*, the bracteæ being ſo much leſs conſpicuous than in moſt other ſpecies. The flower-ſtalks and calyx, as well as the apex of the corolla, are hairy and viſcid. This is not a very aromatic ſpecies.

SALVIA verbenaca.



Ne. Amerig del. Jan. 1. 1793.

SALVIA verbenaca.

Wild Engliſh Clary.

DIANDRIA Monogynia.

GEN. CHAR. *Cor.* irregular. *Filaments* attached laterally to a little footſtalk.

SPEC. CHAR. Leaves ſerrated, ſmoothiſh. Corolla much more contracted than the calyx.

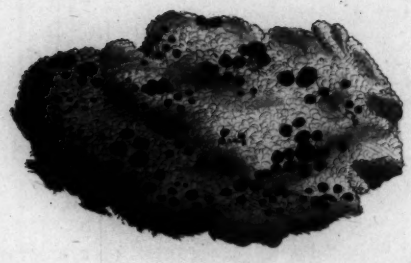
SYN. Salvia verbenaca. *Linn. Sp. Pl.* 35. *Hudſ. Fl. An.* 10. *With. Bot. Arr.* 22. *Relh. Cant.* 10. Horminum ſylveſtre Lavandulæ flore. *Raii Syn.* 237.

COMMON on chalky and gravelly ſoils, as about Charlton. The whole plant is of a deeper green than Salvia pratenſis, and the flowers of a darker blueiſh purple; they are alſo much ſmaller, and by far leſs conſpicuous.

The root is perennial, ſtrong and woody. Radical leaves on footſtalks, ſinuated and crenate; thoſe on the ſtem ſeſſile, ſharply and groſsly ſerrated. Bracteæ entire, heart-ſhaped, acute, larger in proportion to the flowers than in S. pratenſis. The flowers appear in June, and may be found even till October. Our figure expreſſes their ſtructure.

The herb and flowers prove very aromatic upon being rubbed. The ſeeds are black and ſmooth, producing a great quantity of ſoft taſteleſs mucilage when moiſtened, whence they become ſerviceable for removing extraneous matter from the eyes. If put under the eyelid for a few moments, the tears diſſolve their mucilage, which envelops any ſand or duſt that may be in the way, and brings it out ſafely. Gerarde has noticed this.

G.R.
III.



J. Sowerby del.t Jan.y 1. 1794

LICHEN ſanguinarius.

Sanguineous Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, ſcattered warts.

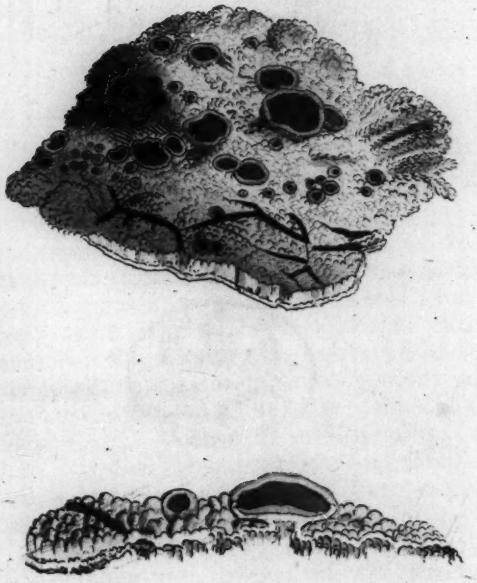
Female, ſmooth ſhields or tubercles, in which the ſeeds are imbedded.

SPEC. CHAR. Cruſtaceous, white and poliſhed. Tubercles black, deſtitute of a border, bright red within.

SYN. Lichen ſanguinarius. *Linn. Sp. Pl.* 1607. *Hudſ. Fl. An.* 524.

GATHERED copiouſly by Dr. Smith on the granite rocks of Cromford Moor near Matlock, though rare elſewhere. We have been very ſparing of ſynonyms to this ſpecies, becauſe ſcarcely any author ſeems to have underſtood it. Linnæus confounded together ſeveral ſpecies of Lichen, under the name of ſanguinarius, which in our opinion are diſtinct, eſpecially one with a thin greyiſh ground, and marginated tubercles, found on the bark of ſmooth young trees, and another with a thick greeniſh cruſt, found on rocks. In this Meſſrs. Hudſon, Lightfoot, Relhan and Withering follow him without any diſcrimination. We ſhould diſſent from theſe reſpectable authorities with great diffidence, if they appeared to have examined the matter at all. What we here offer is the true L. ſanguinarius, on the authority of the deſcription in Sp. Pl. ed. 1 and 2, as well as of the Linn. Herbarium (in which there is a ſpecimen of it on the bark of a tree), and may be certainly diſtinguiſhed by the following marks:—

The cruſt is white and poliſhed, not mealy, often of a conſiderable thickneſs, its ſurface conſiſting of minute unequal knobs or *rugæ*, its ſubſtance very white internally, though ſometimes ſtained with a moſt vivid vermilion hue. The tubercles are very various in ſize, flat, and imbedded at firſt among the inequalities of the cruſt, but ſoon riſing above it, and becoming very convex, even globoſe, without any perceptible border, very black, ſcarcely ſhining. If their black ſurface be pared off, a thicker layer of grey appears, and under that a mixture of white and red, appearing to be the cruſt of the plant elevated into the centre of the tubercle, and ſo becoming more conſtantly (though not infallibly) red than it is of itſelf in other parts.



J.e Sowerby del.t jan.y 1794.

LICHEN tartareus.

Tartareous Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, ſcattered warts.

Female, ſmooth ſhields or tubercles, in which the ſeeds are imbedded.

SPEC. CHAR. Cruſtaceous, whitiſh. Shields yellow, with a white margin.

SYN. Lichen tartareus. *Linn. Sp. Pl.* 1608. *Hudſ. Fl. An.* 529. *With. Bot. Arr. V.* 3. 180.

Lichenoides cruſtaceum et leproſum, acetabulis majoribus luteis, limbis argenteis. *Raii Syn.* 71. *Dill. Muſc.* 132. *t.* 18. *f.* 13.

FREQUENT on rocks in Scotland and the north of England. This is the largeſt of our cruſtaceous Lichens. The cruſt has a tuberculated ſurface, and is externally of a greyiſh white, though ſnow-white within. In thickneſs it varies from an inſeparable film running over moſſes and turf, and aſſuming their form, to a ſolid ſubſtance of full a quarter of an inch or more. Its diameter is often 6, 8 or 10 inches. The ſhields are from a line to half an inch in breadth, flat, ſmooth, not ſhining, of a yellowiſh buff-colour, with a white elevated, often rugged, margin. Theſe ſhields prove occaſionally proliferous, or aggregate.

Lichen tartareus may be known, even without fructification, by a peculiar pungent alkaline ſmell when moiſtened. It is much uſed in dyeing. The gatherers carefully chooſe ſuch ſpecimens as are of a firm denſe texture, and they never ſcrape the ſame rock oftener than once in five years. It is prepared for uſe with volatile alkali and alum, but the exact proceſs is kept a ſecret by the manufacturers at Glaſgow. When ſold to the Dyers, it appears in the form of a purple powder, called *Cudbear* (a corruption of Cuthbert, the name of its inventor). This powder being boiled with woollen yarn, communicates its colour to it, but not to vegetable ſubſtances. The colour is far from permanent. See Dr. Smith's *Tour on the Continent*, *vol.* 1. *p.* 198.

Pl. Europ. sel. Fol. 1703

GERANIUM rotundifolium.

Doves-foot Craneſbill.

MONADELPHIA Decandria.

GEN. CHAR. *Style* one. *Cor.* of 5 petals, regular. *Nectary* 5 glands at the baſe of the longer ſtamina. *Fruit* beaked, ſeparating into 5 arilli, each tipped with a long ſimple naked awn.

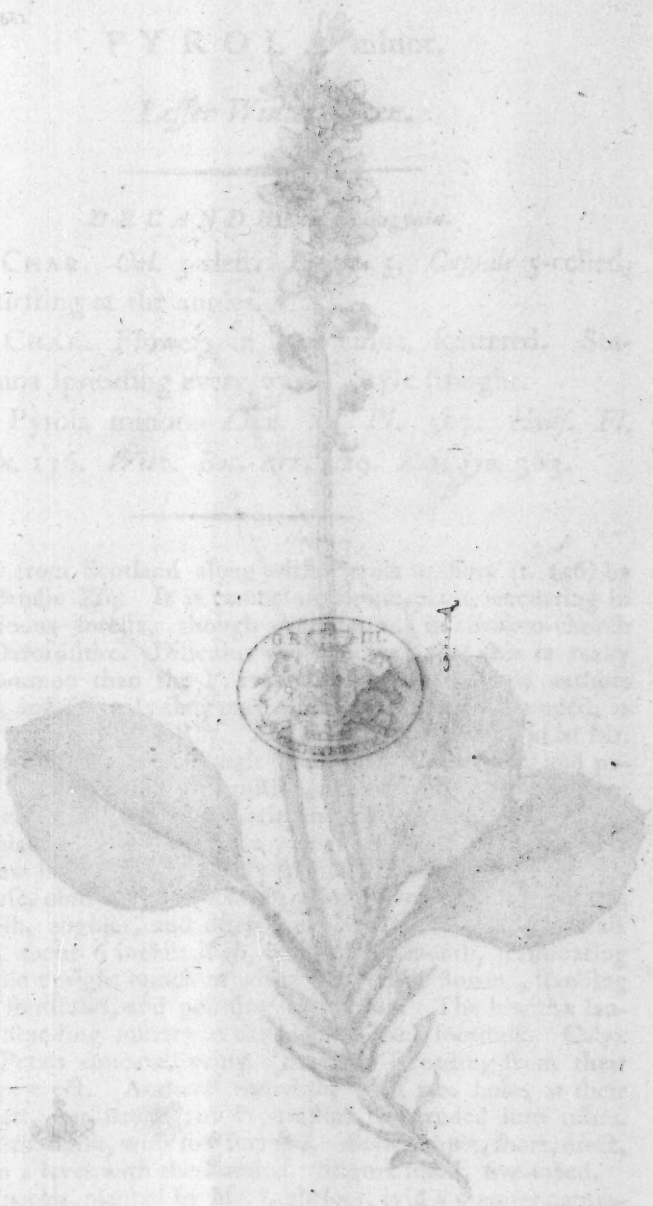
SPEC. CHAR. Stalks two-flowered. Petals entire, the length of the calyx. Stem ſpreading. Leaves kidney-ſhaped, cut. Arillus even, hairy. Seeds reticulated.

SYN. Geranium rotundifolium. *Linn. Sp. Pl.* 957. *Hudſ. Fl. An.* 303. *With. Bot. Arr.* 732.

G. columbinum majus, flore minore cæruleo. *Raii Syn.* 358.

FROM under a wall near Hackney, gathered by Mr. E. Forſter jun. who has alſo found it about Iſlington, and at Church Bramton in Northamptonſhire. This is one of the leaſt general of our Craneſbills, though abundant in quantity where it does grow.

This ſpecies is annual, and flowers in June and July. The ſtems are much branched, ſtraggling, but ſcarcely proſtrate. Every part of the herb is clothed with a velvet-like downineſs, very ſoft to the touch. The leaves are more round than in ſome other common ſpecies; their colour paler. It is, however, needleſs to recur to the vague marks of diſtinction given by all authors, as the punctated or reticulated ſeeds diſtinguiſh this from all its allied ſpecies, eſpecially from the puſillum, with which its arillus ſomewhat agrees; though even in that part they may be diſtinguiſhed, the hairs on the arillus of puſillum being *cloſe preſſed*, not ſpreading. The arillus of molle differs from both in being very rugged, and not even, in its ſurface. That of pyrenaicum is even, ſharply carinated, and ſcarcely pubeſcent at all.



J.C. sculp. Feb.y 1794

PYROLA minor.

Leſſer Winter-green.

DECANDRIA Monogynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Capſule* 5-celled, burſting at the angles.

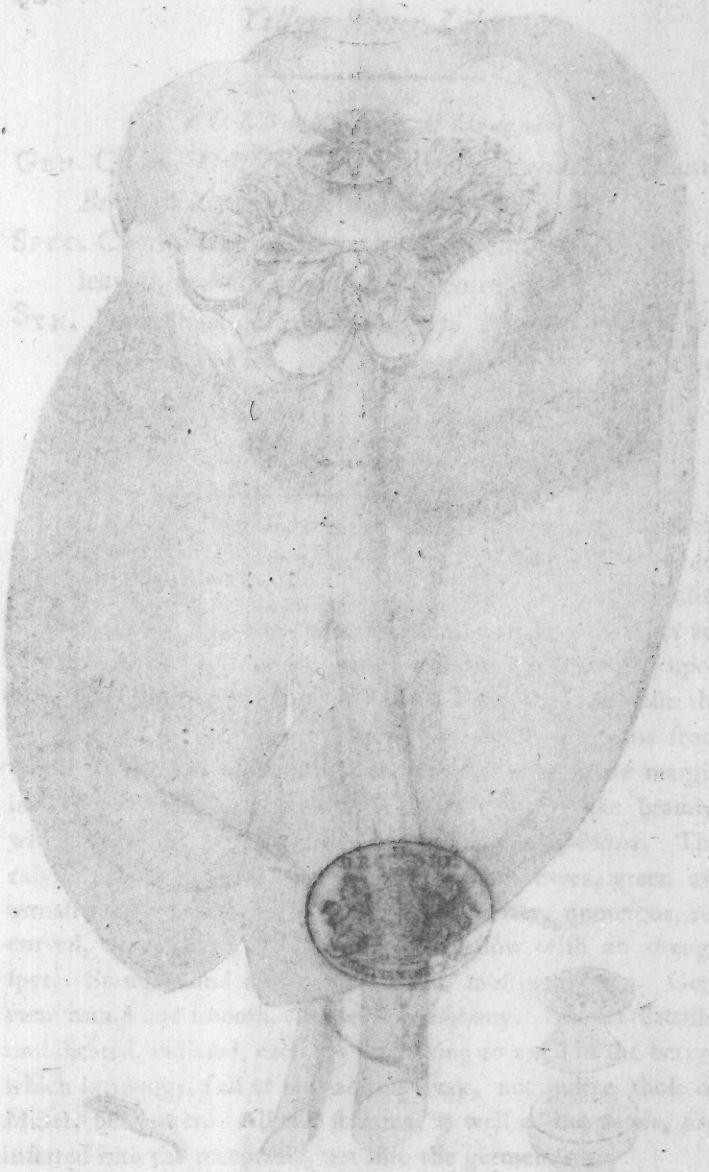
SPEC. CHAR. Flowers in a racemus, ſcattered. Stamina ſpreading every way. Style ſtraight.

SYN. Pyrola minor. *Linn. Sp. Pl.* 567. *Hudſ. Fl. An.* 176. *With. Bot. Arr.* 429. *Raii Syn.* 363.

SENT from Scotland along with Pyrola uniflora (t. 146) by James Brodie Eſq. It is rather an alpine plant, occurring in mountainous foreſts, though even found in Stoken-church woods Oxfordſhire. Dillenius well obſerves, that this is really more common than the P. rotundifolia, called by old authors *vulgaris*, and ſuſpects they may often have been confounded, as they certainly were by Ray. Dr. Smith found them ſo in Mr. Lightfoot's herbarium, though ſo diſtinct in the form and poſition of their ſtamina and piſtilla, as we hope to demonſtrate when we can obtain a wild ſpecimen of P. rotundifolia.

The plant now figured has a perennial branchy root, producing a few ſhort, angular, leafy ſtems. The leaves are roundiſh, obtuſe, obſoletely ſerrated, of a hard firm texture, ſmooth, on longiſh, angular, and often webbed, footſtalks. The ſtalk is erect, about 6 inches high, triangular, ſmooth, terminating in a ſimple upright bunch of white or reddiſh flowers, ſtanding on ſhort footſtalks, and pointing every way. The bracteæ lanceolate, ſtanding ſolitary at the baſe of each footſtalk. Calyx ſmall. Petals concave, veiny. Stamina ſpreading from their baſe, then erect. Antheræ roundiſh, with two holes at their lower part, but not, as in P. uniflora, protruded into tubes. Germen roundiſh, with five furrows. Style ſimple, ſhort, erect, nearly on a level with the ſtamina. Stigma ſmall, five-lobed.

This ſpecies, planted by Mr. Lightfoot, is in a manner naturalized in the Duke of Portland's fine wood at Bulſtrode.



NYMPHÆA lutea.

Yellow Water-Lily.

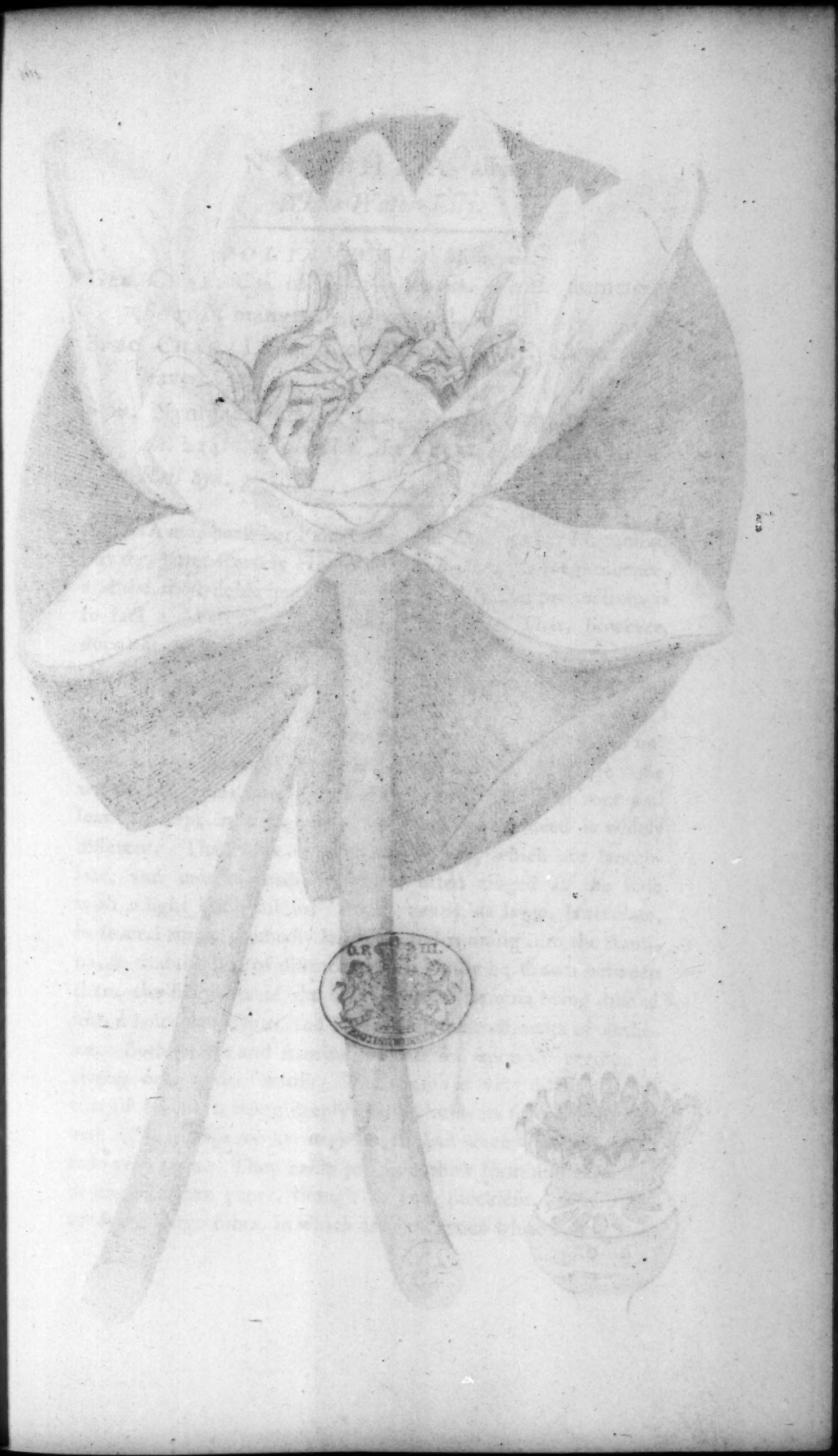
POLYANDRIA Monogynia.

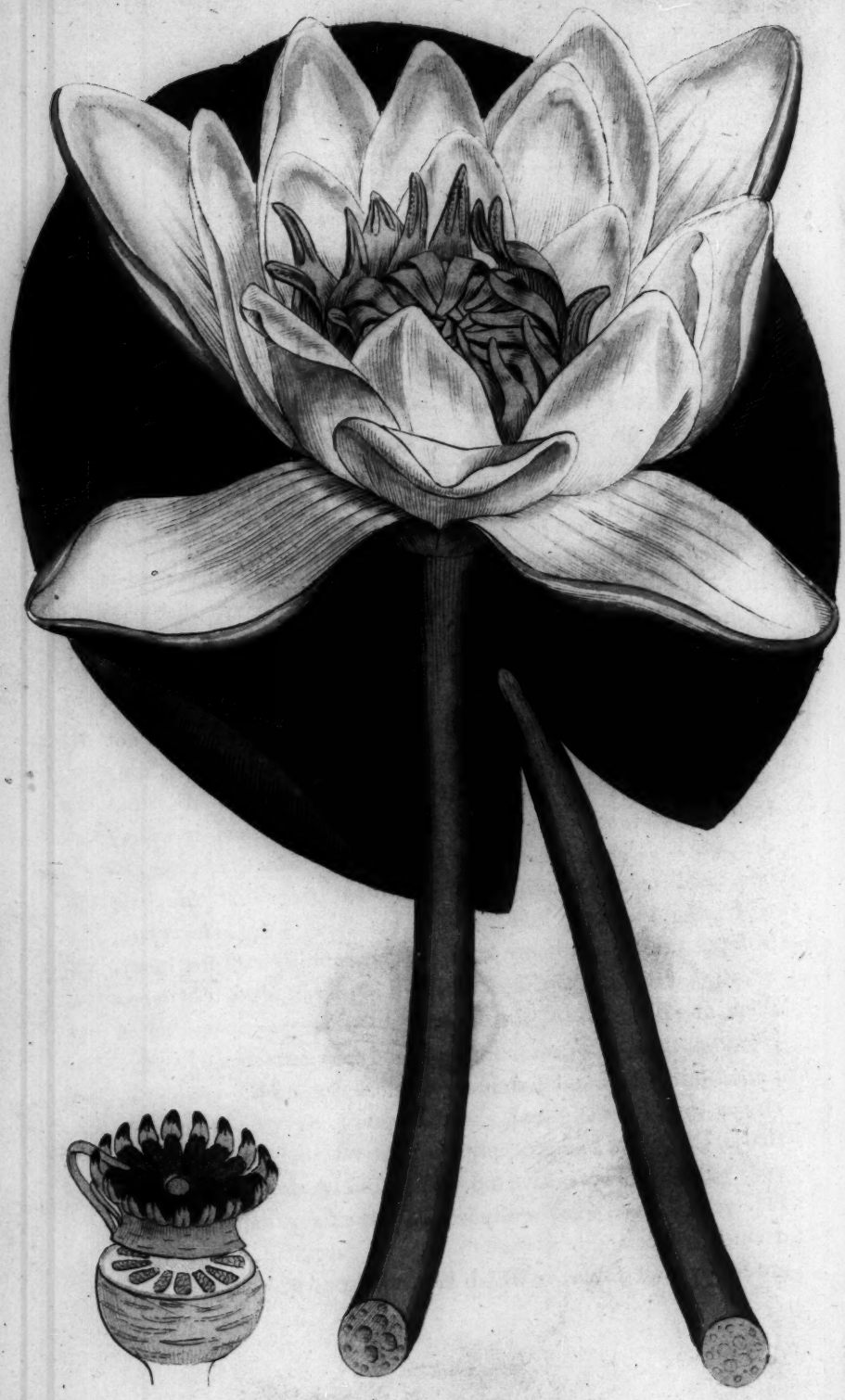
GEN. CHAR. *Cal.* of 4 or 5 leaves. *Petals* numerous. *Berry* of many cells, truncated.

SPEC. CHAR. Leaves heart-ſhaped, entire. Calyx five-leaved, much exceeding the corolla.

SYN. Nymphæa lutea. *Linn. Sp. Pl.* 729. *Hudſ. Fl. An.* 234. *With. Bot. Arr.* 554. *Relh. Cant.* 205. *Raii Syn.* 368.

A VERY general inhabitant of rivers and large pools, flowering about the middle of ſummer very copiouſly. Root perennial, running deep into the mud. Leaves radical, on roundiſh footſtalks flattened on one ſide, which are longer or ſhorter according to the depth of the water, the leaf itſelf floating upon the ſurface, to which its under ſide is cloſely applied, while the upper remains dry. A remarkable line or furrow runs from the inſertion of the footſtalk to the tip of the leaf; the margin is entire. The flowers, as Ray obſerves, ſmell like brandy, whence they are vulgarly called in Norfolk *brandy-bottles*. The calyx is of five large obovate concave yellow leaves, green externally towards the baſe. Petals much ſhorter, numerous, recurved, very obtuſe, thick and fleſhy, yellow with an orange ſpot. Stamina and antheræ recurved, moſtly uniform. Germen round and ſmooth. Style ſcarcely any. Stigma flattiſh, umbilicated, radiated, each ray anſwering to a cell in the berry; which is ſpongy, full of farinaceous ſeeds, not unlike thoſe of Millet, but larger. All the ſtamina, as well as the petals, are inſerted into the receptacle, not into the germen.





J.T. Barclay Sculpt. Fleet St. 1791

NYMPHÆA alba.

White Water-Lily.

POLYANDRIA Monogynia.

GEN. CHAR. *Cal.* of 4 or 5 leaves. *Petals* numerous. *Berry* of many cells, truncated.

SPEC. CHAR. Leaves heart-ſhaped, entire. Calyx four-leaved.

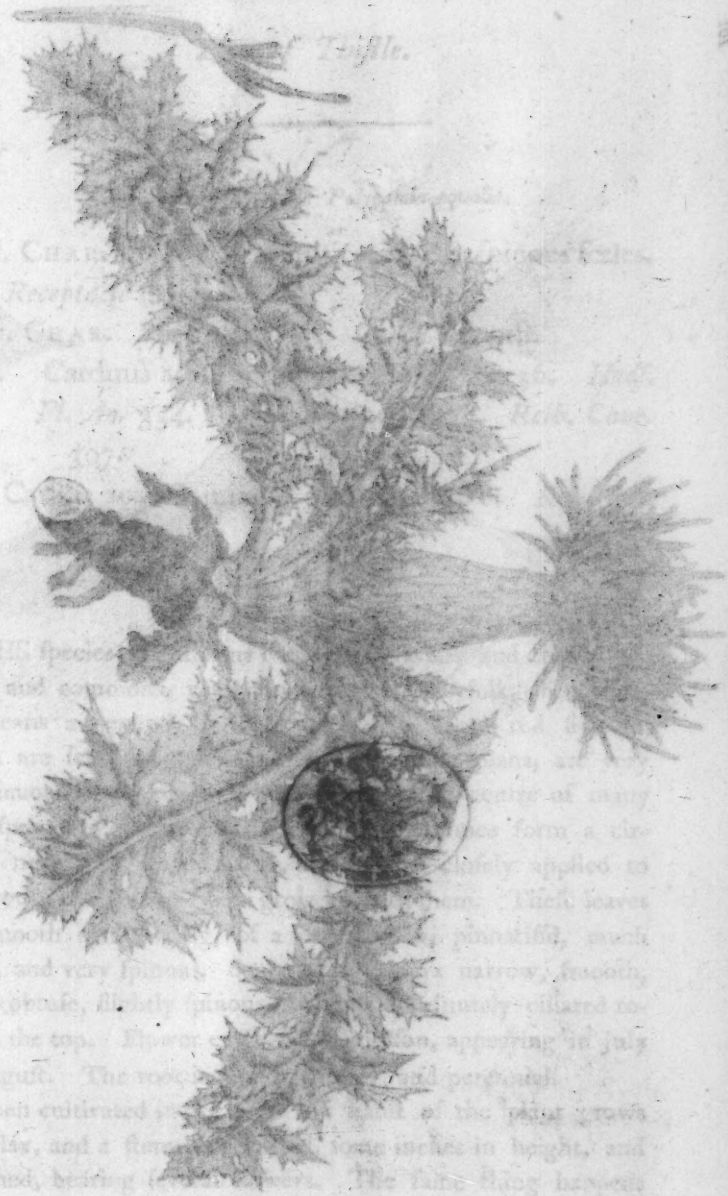
SYN. Nymphæa alba. *Linn. Sp. Pl.* 729. *Hudſ. Fl. An.* 234. *With. Bot. Arr.* 555. *Relh. Cant.* 206. *Raii Syn.* 368.

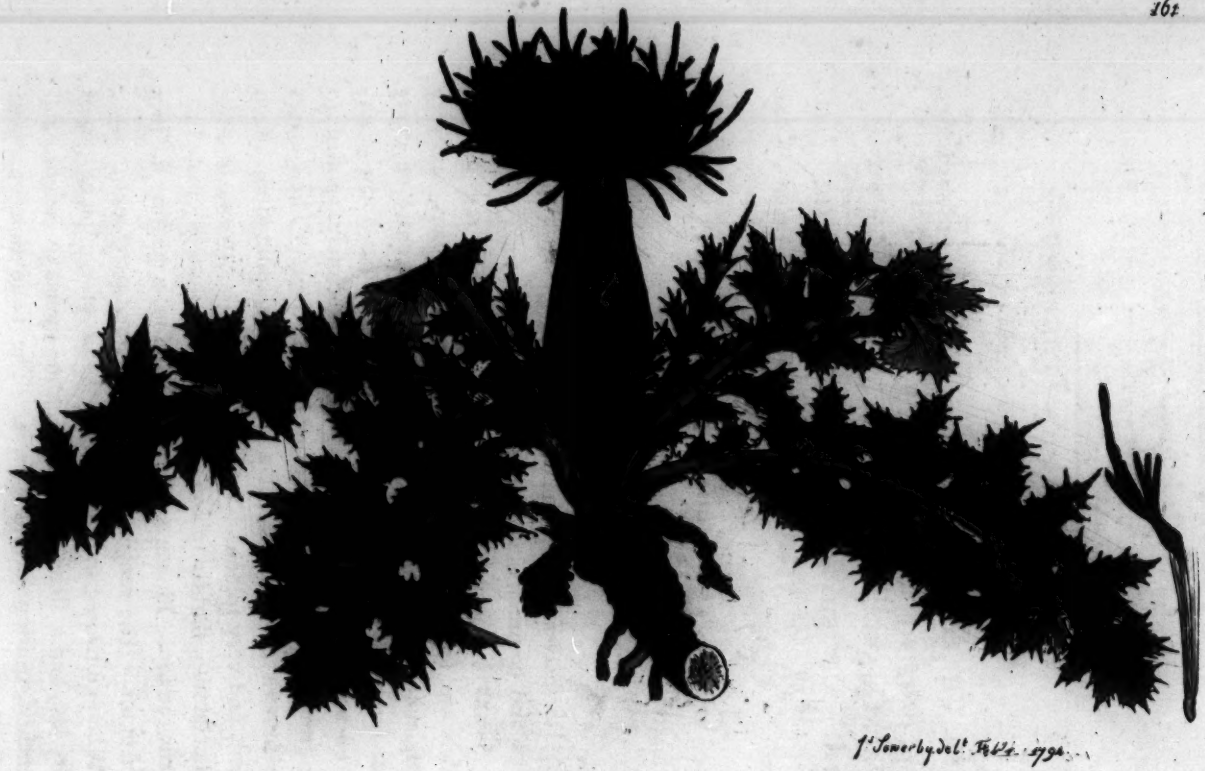
INDIA may boaſt her Palm-trees, and America her Magnolias, but the latter ſcarcely exceed our Nymphæa in magnificence, and the moſt noble and celebrated of all Indian productions is in fact a Water-lily, Nymphæa Nelumbo. That, however, does not more excell the other vegetables of its country, than this every Britiſh plant beſides. It has altogether the air of a Tropical production.

Though by far leſs common than the lutea, this kind is not rare in ſome parts of England. It flowers at the ſame time with that ſpecies, and agrees with it very much in root and leaves, except in being larger. The flower indeed is widely different. The calyx of four leaves only, which are lanceolate, and more ſpreading, white, often tinged at the baſe with a light bluſh-colour. Petals nearly as large, lanceolate, in ſeveral rows, gradually leſſening and running into the ſtamina, ſo that the line of diſtinction can hardly be drawn between them, the filaments of the outer rows of ſtamina being dilated into a lanceolate form, and having but the rudiments of antheræ. Both petals and ſtamina are inſerted upon the germen in circles even to its ſummit. The ſtigma is very different from that of N. lutea, being deeply cloven, and its ſegments recurved. Theſe flowers have no ſmell, and when gathered they fade very ſoon. They eaſily preſerve their form and colour in drying between paper, though ſo very ſucculent. The ſtalks are full of large tubes, in which are numerous white hairs.

CARDUUS acaulis.

Chardon sans Tige.





J.t Sowerby del.t Feb.y 1794.

CARDUUS acaulis.

Dwarf Thiſtle.

SYNGENESIA Polygamia-æqualis.

GEN. CHAR. *Cal.* ovate, imbricated with ſpinous ſcales. *Receptacle* hairy.

SPEC. CHAR. Stem wanting. Calyx ſmooth.

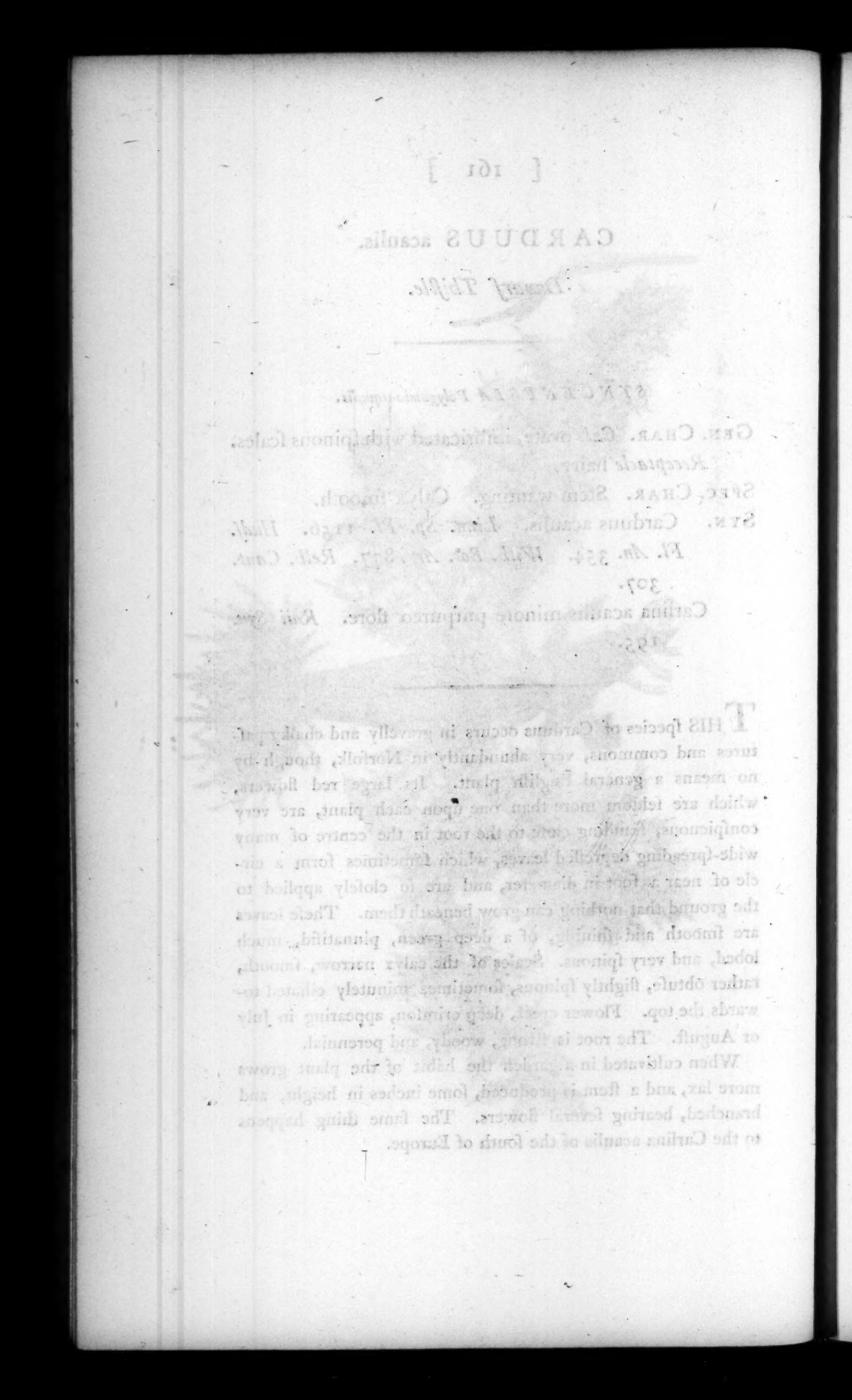
SYN. Carduus acaulis. *Linn. Sp. Pl.* 1156. *Hudſ. Fl. An.* 354. *With. Bot. Arr.* 877. *Relh. Cant.* 307.

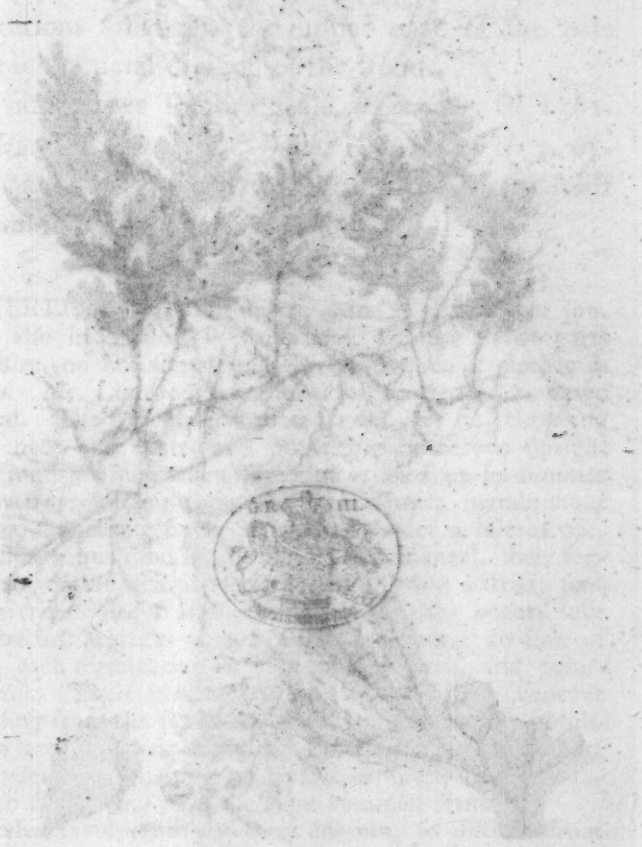
Carlina acaulis minore purpureo flore. *Raii Syn.* 195.

THIS ſpecies of Carduus occurs in gravelly and chalky paſtures and commons, very abundantly in Norfolk, though by no means a general Engliſh plant. Its large red flowers, which are ſeldom more than one upon each plant, are very conſpicuous, ſtanding cloſe to the root in the centre of many wide-ſpreading depreſſed leaves, which ſometimes form a circle of near a foot in diameter, and are ſo cloſely applied to the ground that nothing can grow beneath them. Theſe leaves are ſmooth and ſhining, of a deep green, pinnatifid, much lobed, and very ſpinous. Scales of the calyx narrow, ſmooth, rather obtuſe, ſlightly ſpinous, ſometimes minutely ciliated towards the top. Flower erect, deep crimſon, appearing in July or Auguſt. The root is ſtrong, woody, and perennial.

When cultivated in a garden the habit of the plant grows more lax, and a ſtem is produced, ſome inches in height, and branched, bearing ſeveral flowers. The ſame thing happens to the Carlina acaulis of the ſouth of Europe.

CARDUUS acaulis.





J.t Sowerby del.t Feb.y 1.st 1794

HYMENOPHYLLUM Tunbridgenſe.

Tunbridge Filmy-leaf.

CRYPTOGAMIA Filices.

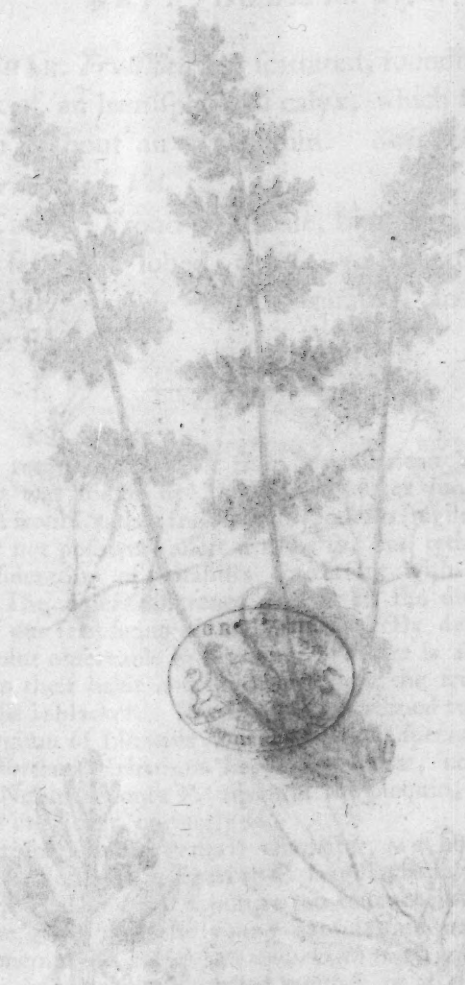
GEN. CHAR. *Fructifications* inſerted into the margin of the frond, diſtinct. *Involucrum* two-valved, flattiſh, ſtraight, opening outwards, longer than the *Column*. *Smith Mem. of the Turin Acad. Vol.* 5.

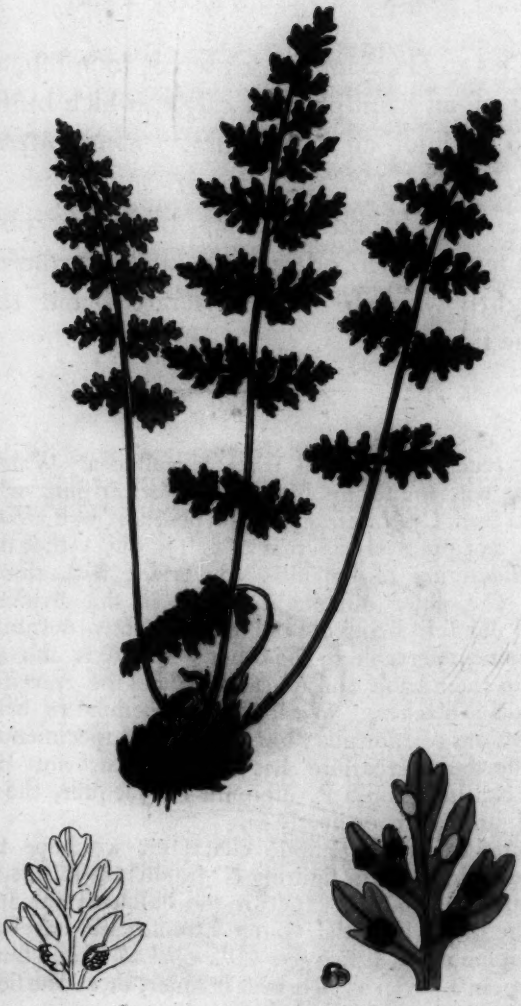
SPEC. CHAR. Fronds alternately bipinnate, decurrent, ſharply ſerrated as well as the involucrum. Fructifications ſolitary at the upper edge of the baſe of each general diviſion of the frond.

SYN. Trichomanes Tunbridgenſe. *Linn. Sp. Pl.* 1561. *Hudſ. Fl. An.* 461. *With. Bot. Arr. Vol.* 3. 65. Adiantum petræum perpuſillum Anglicum, foliis bifidis vel trifidis. *Raii Syn.* 123.

GATHERED near Tunbridge by Mr. T. F. Forſter jun. It grows alſo in Wales, Weſtmorland, and the north parts of Yorkſhire, on horizontal moiſt rocks, which it clothes in large tufts. Mr. Lightfoot mentions this ſpecies as common in Scotland. The ſlender wiry roots ſpread very far, throwing out fibres here and there, and producing numerous upright leaves or fronds, which when ſometimes dried up in ſummer curl backwards. Their ſubſtance is extremely membranous and pellucid, appearing finely reticulated under a microſcope, as in all this genus (and in the real Trichomanes), their ſegments linear, obtuſe, ſharply ſerrated, and having a ſtrong ſimple central rib. The fructifications, when they occur, take place of the firſt ſegment of each *pinna* or general diviſion of the frond, each terminating its appropriate nerve, and pointing upwards. Their involucrum is of two ſlightly concave valves, ariſing from the ſubſtance of the leaf, irregularly notched and ſerrated in their margin. Between theſe is a ſhort column, beſet with ſmall round bivalve capſules, each embraced with an elaſtic ring as in the more common ferns.

The bivalve involucrum and ſhort column, ſo diſtinct from the urn-ſhaped undivided involucrum, and long column or ſtyle, of the true Trichomanes, have induced Dr. Smith to eſtabliſh this new genus in his Diſſertation on Ferns, printed by the Academy of Turin. We have attempted to give it an Engliſh name, which is a tranſlation of its Greek one.





J.t Sowerby del.t Febr.i 1794

CYATHEA inciſa.

Laciniated Cup-fern.

CRYPTOCAMIA Filices.

GEN. CHAR. *Fructifications* ſcattered, roundiſh, growing out of an hemiſpherical calyx, which burſts at the top without an operculum. *Smith Mem. of the Turin Acad. Vol. 5.*

SPEC. CHAR. Frond lanceolate, bipinnate, pinnatifid; its ſegments lobed, obtuſe, and beardleſs. Stalk ſlightly winged. Calyx lacerated, and turned to one ſide.

WE received this fern from a wall near Walthamſtow, where it was found by Mr. T. F. Forſter jun. who thinks it diſtinct from Cyathea fragilis (Polypodium fragile of Linnæus). We dare not poſitively aſſert it to be ſo, but rather offer it for the conſideration of botaniſts converſant with this intricate tribe. The chief difference conſiſts in the diviſions of the leaves of our fern being obtuſe, and perfectly deſtitute of the briſtly point obſervable in the other. There is alſo ſome difference in their habit and appearance, and the fructification of the fragilis is blacker. We have been inclined to believe ours the P. regium of Linnæus; but the original ſpecimen of that in the Cliffortian herbarium has a triangular, not lanceolate, frond. Neither is ours P. alpinum of Jacquin, the diviſions of which are linear, or nearly ſo.

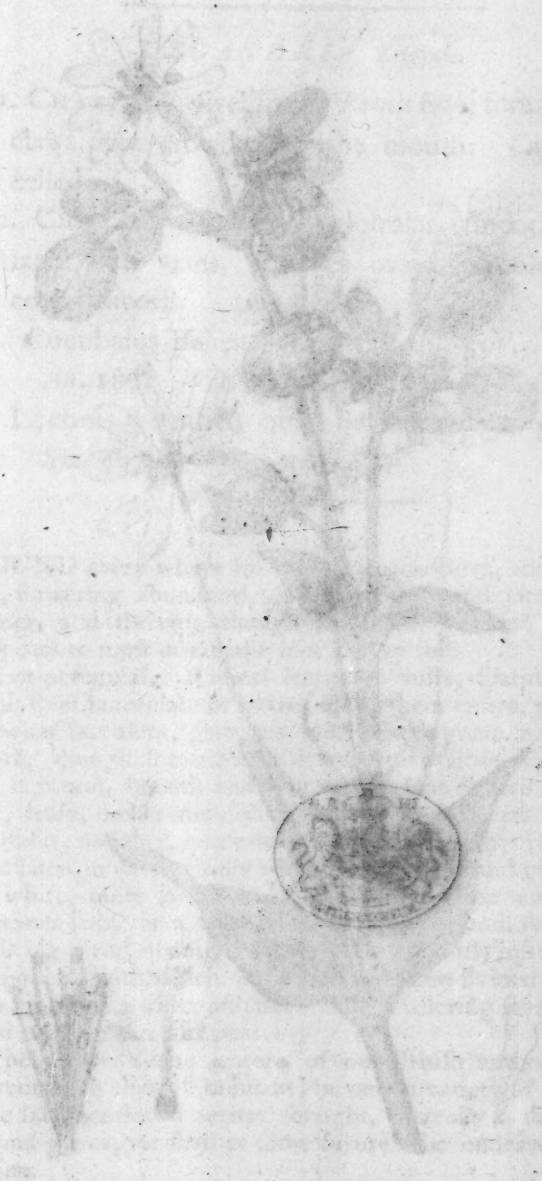
With reſpect to the generic character, we hope to give a more clear idea of it in figuring C. fragilis, as in this the parts are too minute, and the ſtructure too obſcure; but it is eſſential to the genus that the young capſules are enveloped in a *globular* membrane, *which goes underneath them*, and burſts either at the top, in an even or lacerated manner, or at the ſide (fig. 1.) as in this ſpecies and ſome others.

In ſome ſpecimens the fronds are broader and more dilated than thoſe we have drawn.

CYATHEA Incila.

Lacerated Cup-fern.

OUCUBALUS.



J.ᵉ Sowerby del.ᵗ March 1794.

CUCUBALUS Behen.

Bladder Campion.

DECANDRIA Trigynia.

GEN. CHAR. *Cal.* ſwelling. *Petals* five, furniſhed with claws, not crowned at the mouth. *Capſ.* three-celled.

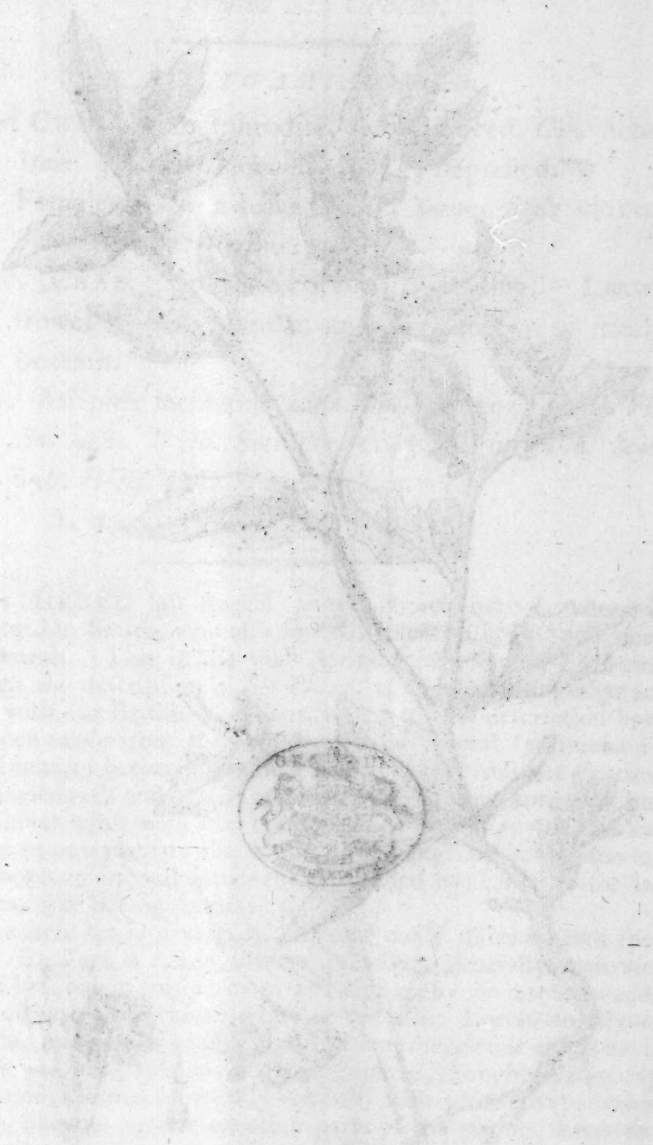
SPEC. CHAR. Calyx nearly globular, ſmooth, reticulated with veins. Leaves ovato-lanceolate, glaucous, ſmooth.

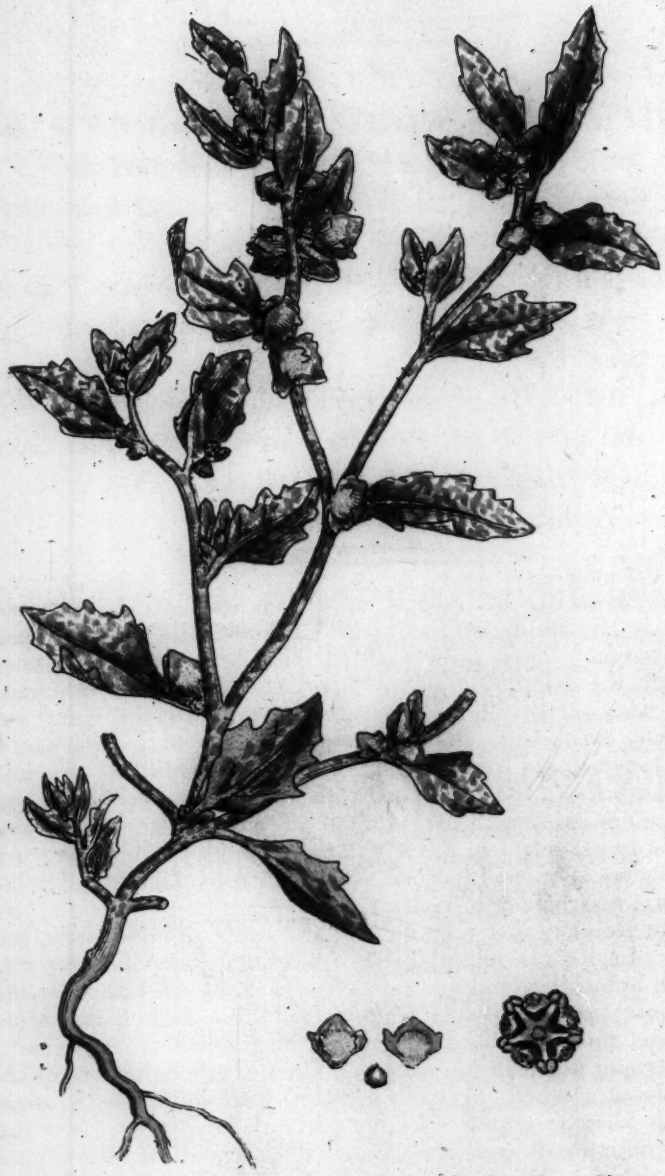
SYN. Cucubalus Behen. *Linn. Sp. Pl.* 591. *Hudſ. Fl. An.* 186. *With. Bot. Arr.* 445. *Relh. Cant.* 168. Lychnis ſylveſtris, quæ Ben album vulgo. *Raii Syn.* 337.

FOUND every where in corn-fields, paſtures, and by way-ſides, flowering abundantly in the middle and latter part of ſummer, and thriving though frequently covered with duſt. It appears to moſt advantage in a chalky ſoil.

Root perennial. Radical leaves in tufts, ſpatulate; thoſe on the ſtem lanceolate or ovate; all of them entire, pliable and ſomewhat ſucculent, glaucous, with a very green pulp, moſtly ſmooth, though ſometimes ciliated and a little hairy. The ſtem is round, ſmooth and glaucous, a foot or two in height, erect, leafy, dichotomouſly panicled. The flowers on ſlender foot-ſtalks, nodding, numerous, with ſcarcely any ſmell. Calyx inflated, and beautifully veined with purple and green. Petals white, quite deſtitute of a crown. The antheræ are ſometimes liable to a diſeaſe, becoming large and ſwelled, and producing a vaſt quantity of barren purple duſt, inſtead of the true pollen, with which the petals are often ſtained ſo as to be diſcoverable at a great diſtance. Dr. Withering ſays the leaves boiled may be eaten as peas.

Whether the Silene amœna of our Britiſh authors (widely different from that of Linnæus) be only a variety of this plant, as the laſt-mentioned writer thought, or really a diſtinct ſpecies and genus, we ſhall at ſome future time endeavour to determine.





ATRIPLEX laciniata.

Froſted Sea Orache.

POLYGAMIA Monoecia.

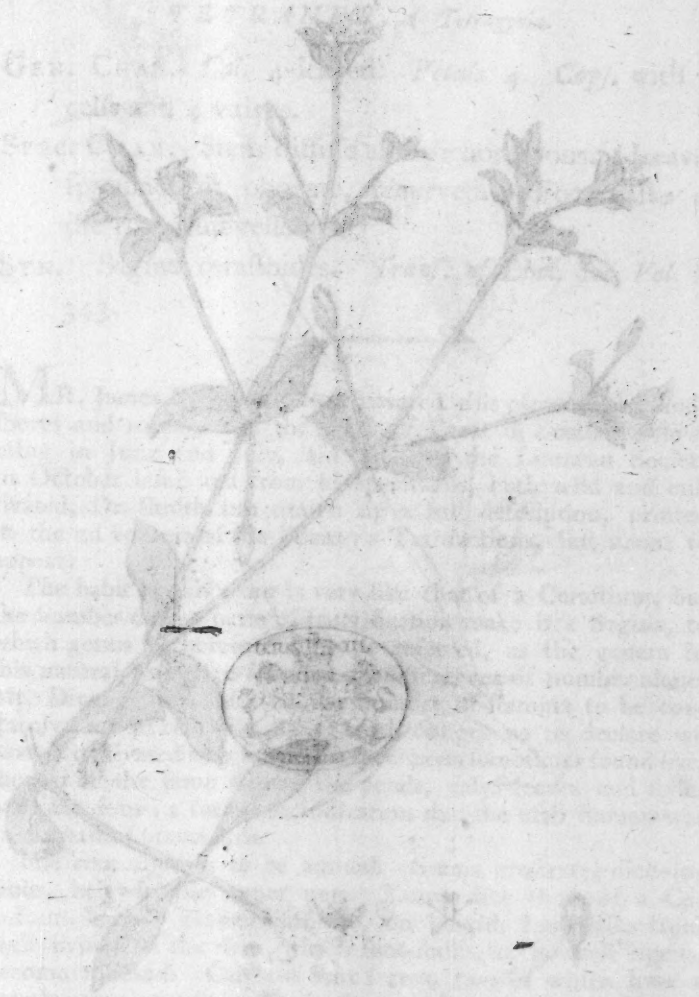
GEN. CHAR. Hermaphrodite. *Cal.* 5-leaved. *Cor.* none. *Stam.* 5. *Style* cloven. *Seed* 1, depreſſed.
Female. *Cal.* 2-leaved. *Cor.* none. *Style* cloven. *Seed* 1, compreſſed.

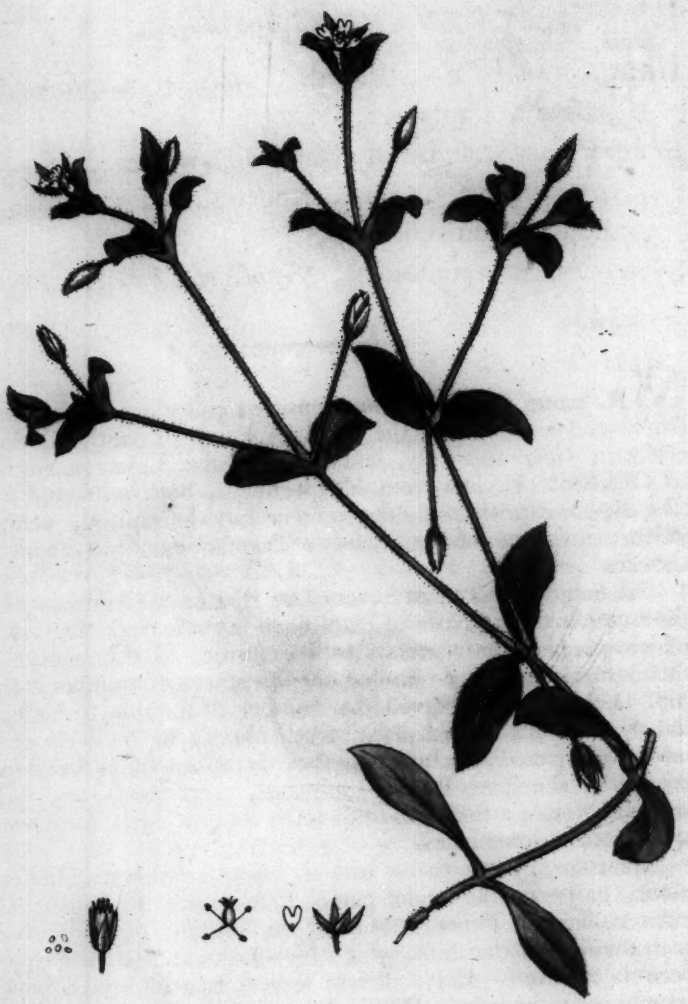
SPEC. CHAR. Stem herbaceous, ſpreading. Leaves trowel-ſhaped, angular and dentated, very mealy beneath.

SYN. Atriplex laciniata. *Linn. Sp. Pl.* 1494. *Hudſ. Fl. An.* 442. *With. Bot. Arr.* 1143. *Lightf. Flo. Scot.* 636. *Dickſ. Hort. ſicc. faſc.* 4. *n.* 15.
A. maritima. *Raii Syn.* 152.

GATHERED laſt Auguſt on the beach near Landguard-fort by Dr. Smith, who alſo found it plentifully at Leith near Edinburgh. This is the real Atriplex laciniata of Linnæus, though the deſcription in *Sp. Pl. ed.* 2, does not altogether accord with our Britiſh ſpecimens, owing to that deſcription having been made from the conſideration of ſeveral ſpecimens in the Linnæan herbarium which to us appear diſtinct ſpecies. Mr. Lightfoot's and Mr. Woodward's deſcriptions are good; but we cannot agree with Mr. Hudſon in referring any of the varieties of our plant to the A. tatarica, though poſſibly ſome of the above-mentioned ſpecimens, deſcribed by Linnæus for laciniata, may belong to tatarica.

Our laciniata is a very diſtinct and eaſily diſcriminated ſpecies. Its ſtem is round, always ſpreading, generally proſtrate, much branching, and more or leſs zigzag, by no means wand-like (*virgatus*), its colour white or reddiſh. Leaves moſtly alternate, more or leſs triangular, but lengthened out at the baſe, deeply and unequally toothed and ſinuated, though not properly laciniated, clothed (eſpecially beneath) with white ſilvery ſcales, which likewiſe appear on other parts of the plant. Even the hermaphrodite flowers are ſcarcely ſpiked, and the female ones are axillary. The ſeed of the former we have not found in perfection. The calyx of the latter grows very large, and is generally furniſhed with lateral protuberances; it encloſes a large compreſſed ſmooth ſeed. The root is annual, and thrives in the pure ſand of the ſea-ſhore





J.° Sowerby delt. March 1.1794.

SAGINA ceraſtoides.

Mouſe-ear Pearl-wort.

TETRANDRIA Tetragynia.

GEN. CHAR. *Cal.* 4-leaved. *Petals* 4. *Capſ.* with 4 cells and 4 valves.

SPEC. CHAR. Stem diffuſe and dichotomous. Leaves ſpatulate or obovate, recurved. Foot-ſtalks of the ripe fruit reflexed.

SYN. Sagina ceraſtoides. *Tranſ. of Linn. Soc. Vol.* 2. 343.

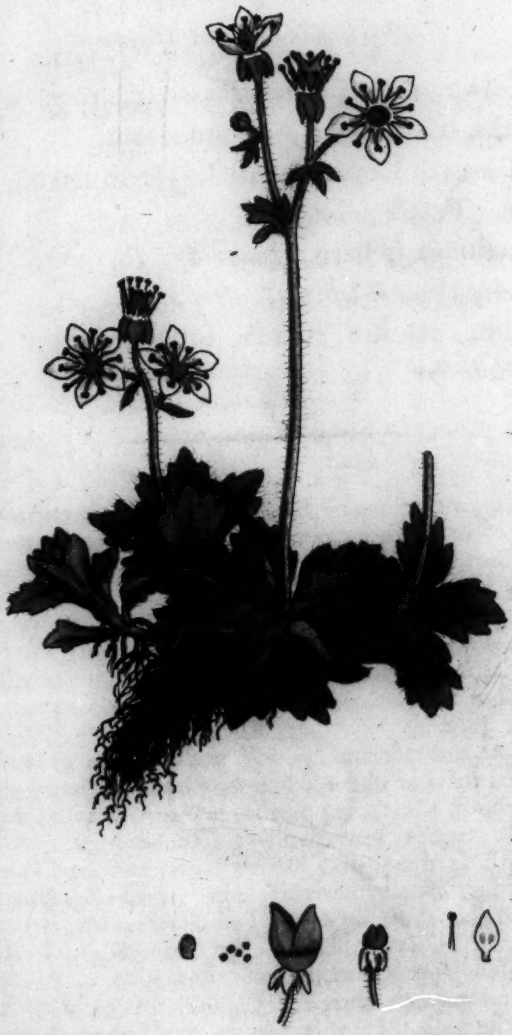
MR. James Dickſon, who diſcovered this plant on the ſandy ſhores and rocks about the Firth of Forth in Scotland, flowering in June and July, laid it before the Linnæan Society in October laſt; and from his ſpecimens, both wild and cultivated, Dr. Smith has drawn up a full deſcription, printed in the 2d volume of the Society's Tranſactions, juſt about to appear.

The habit of this plant is very like that of a Ceraſtium, but the number of the parts of fructification make it a Sagina, to which genus it therefore muſt be referred, as the genera in this natural order are founded on differences of number alone. Mr. Dickſon has obſerved the number of ſtamina to be conſtantly four in the wild plant: truth obliges us to declare we have in cultivated very luxuriant ſpecimens ſometimes found five, though in the ſame flower the petals, calyx-leaves and ſtyles were but four; a ſufficient indication that the fifth ſtamen was an unnatural luxuriance.

The root appears to be annual. Stems proſtrate, dichotomous, hairy in the upper part. Leaves like thoſe of a Ceraſtium, hairy. Flowers ſolitary, on longiſh foot-ſtalks from each diviſion of the ſtem, which foot-ſtalks, as the fruit ripens, become reflexed. Calyx of four leaves, two of which have a membranous margin. Petals ſhorter than the calyx, cloven, white. Stamina ſtill ſhorter. Germen oval. Styles ſhort. Capſule burſting with 8 blunt teeth. The flowers expand only in bright weather.

SAXIFRAGA Pallasii.

Hairy Saxifrage.



T.C. Lowe del.t Aug.t 1794.

SAXIFRAGA ſtellaris.

Hairy Saxifrage.

DECANDRIA Digynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Capſ.* with two beaks, one-celled; *ſeeds* numerous.

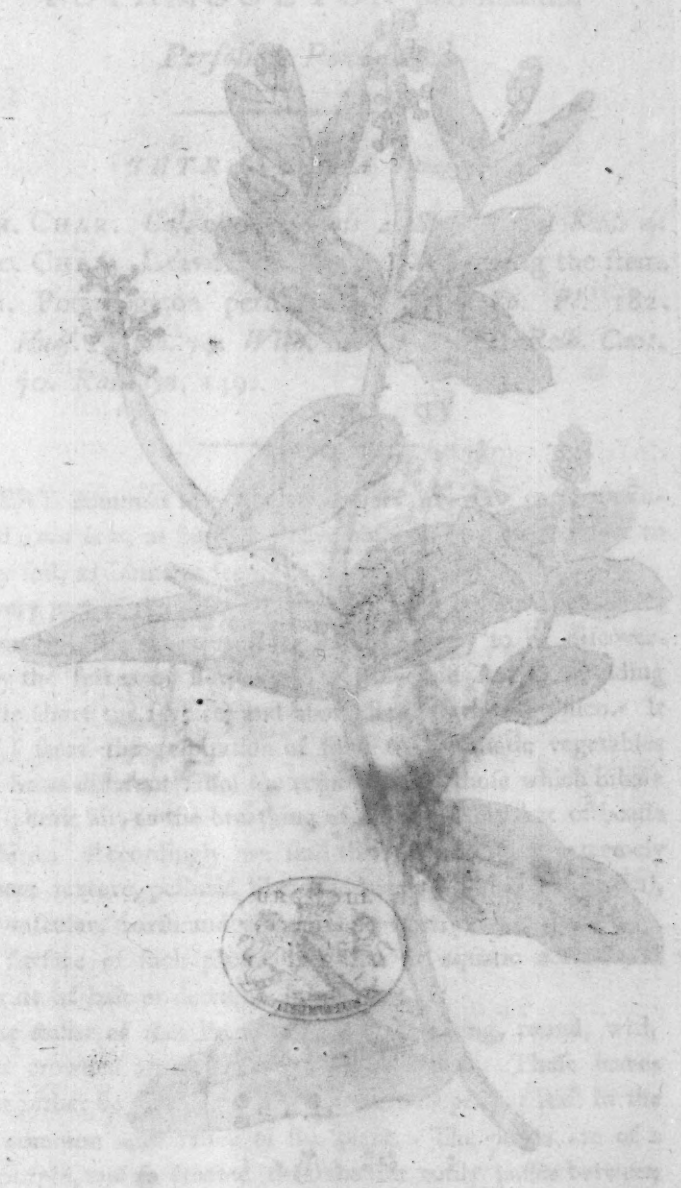
SPEC. CHAR. Leaves ſerrated. Stem naked, branching. Petals pointed.

SYN. Saxifraga ſtellaris. *Linn. Sp. Pl.* 572. *Hudſ. Fl. An.* 179. *With. Bot. Arr.* 430.

Geum paluſtre minus, foliis oblongis crenatis. *Raii Syn.* 354.

THE elegant genus of Saxifraga is almoſt entirely alpine, and moſt of its ſpecies can bear a conſiderable degree of cold, provided they enjoy a pure air. This now before us grows plentifully in Wales, Scotland, and the northern parts of England, eſpecially Weſtmoreland. Dr. Woodville favoured us with freſh wild ſpecimens gathered laſt ſummer on Skiddaw. Its favourite ſtation is in the black turfy margins of rills on the north ſides of mountains, near their ſummits, where it flowers in June or July.

The roots are perennial, long and fibrous, crowned with flat ſtellated tufts of obovate leaves, which are hairy above, paler and ſmooth, ſometimes purple, beneath, pointed and groſsly ſerrated. Stalks from two to ſix inches high, erect, round, clothed with ſcattered divaricating hairs, and ſubdivided at the top into a ſort of corymbus of from 3 to 7 or 9 flowers, each on a partial foot-ſtalk, at whoſe baſe is a bractea, either palmated or entire. Calyx reflexed. Petals ſpreading, ovate, white with 2 yellow ſpots near the baſe. Stamina all nearly equal. Antheræ and germen purple. Capſule green, with a purple ring near the baſe. In this ſpecies and ſome others the germen is completely ſuperior; but there are others again where it is partly, if not altogether, below the flower; ſo that this circumſtance of the ſituation of the germen, ſo important in moſt orders of plants, is in this genus of no conſequence.



J. Sowerby del.t Apr.l 1794

POTAMOGETON perfoliatum.

Perfoliate Pond-weed.

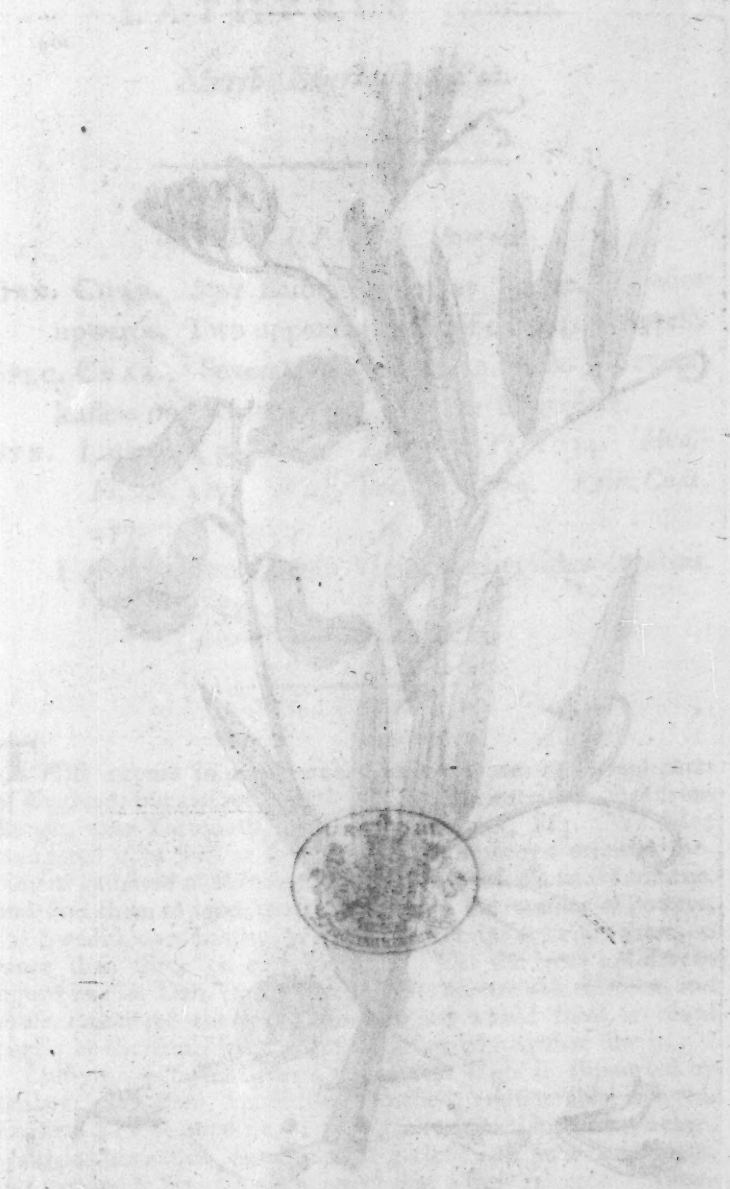
TETRANDRIA Tetragynia.

GEN. CHAR. *Cal.* none. *Petals* 4. *Style* none. *Seeds* 4.
SPEC. CHAR. Leaves heart-ſhaped, embracing the ſtem.
SYN. Potamogeton perfoliatum. *Linn. Sp. Pl.* 182. *Hudſ. Fl. An.* 74. *With. Bot. Arr.* 172. *Relh. Cant.* 70. *Raii Syn.* 149.

VERY common in ponds and rivers in every part of England; nor is it, as far as we have obſerved, at all peculiar to a clay ſoil, as Linnæus ſeems to hint.

Every part of the plant, except the flower-ſtalks, is completely immerſed in the water, ſo that it is only to be diſcovered by the ſpikes of flowers about July and Auguſt ſtanding a little above the ſurface, and abounding in whitiſh pollen. It ſhould ſeem the reſpiration of ſuch truly aquatic vegetables muſt be as different from the reſpiration of thoſe which inhale atmoſpheric air, as the breathing of fiſhes is from that of beaſts and birds. Accordingly we find their leaves of an extremely different texture, pellucid like oiled paper (as Haller remarks), very vaſcular, harſh and ribbed, but often extremely brittle. The ſurface of ſuch plants, like that of aquatic animals, is deſtitute of hair or down of any kind.

The ſtalks of this Pond-weed are very long, round, with leaves crowded about the top and branches. Theſe leaves might rather be called ovate than heart-ſhaped, at leaſt in the moſt common appearance of the plant. The petals are of a dull purple, and ſo ſituated that the air eaſily paſſes between them to waft the pollen to the ſtigma. The ſeeds are compreſſed, and ſhining.



J. Sowerby del. et fec. 1794.

LATHYRUS paluſtris.

Marſh Everlaſting-Pea.

DIADELPHIA Decandria.

GEN. CHAR. *Style* flattened, downy above, broader upwards. Two upper ſegments of the *calyx* ſhorteſt.

SPEC. CHAR. Several flowers on a ſtalk. Several leaflets on each tendril. Stipulæ lanceolate.

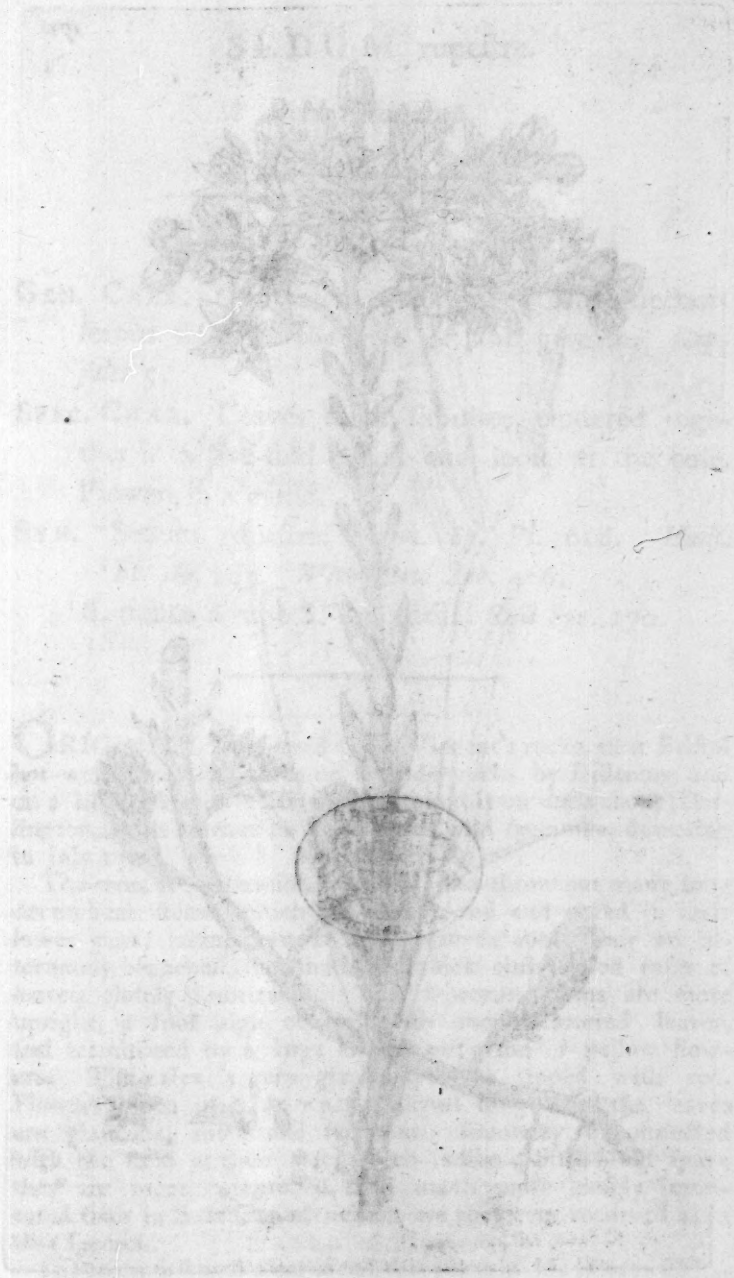
SYN. Lathyrus paluſtris. *Linn. Sp. Pl.* 1034. *Hudſ. Fl. An.* 317. *With. Bot. Arr.* 773. *Relh. Cant.* 273.

L. viciæformis, ſeu Vicia Lathyroides noſtras. *Raii Syn.* 320.

THIS occurs in moiſt woods and paſtures in ſeveral parts of England, but not commonly. Our ſpecimen was ſent from Burgh, near Yarmouth, by Dawſon Turner, Eſq. We have compared it, as well as ſome of Mr. Humphrey's original ſpecimens gathered at Ranaugh *(ſee Hudſ.)* with thoſe of Linnæus, and find them to agree exactly, except in the number of flowers, the Swediſh ones having, as Profeſſor Retzius deſcribes them, no more than three on each footſtalk. Yet the very indifferent figure in Flo. Dan. (t. 399.) repreſents as many as thirteen, and thoſe rather red than blue; ſo that one would think it could hardly be the ſame ſpecies, yet we know of no other like it.

Lathyrus paluſtris grows 3 or 4 feet high if ſupported by buſhes; the ſtem but little branched, conſiderably winged. Leaflets 4 or 6, oppoſite, or rarely alternate, lanceolate, acute, glaucous beneath. Tendrils 2 or 3-cleft. Stipulæ lanceolate, but varying in breadth, their lower lobe a little falcated. Flowers of a vivid purpliſh blue of great beauty, in erect bunches. Pods longiſh and ſmooth, as is every part of the herbage. It thrives in a garden in good ſoil, even if not wet, and is very ornamental, flowering in the middle of ſummer, and continuing ſome time. The roots are perennial.

LATHYRUS palustris.



T. Sowerby delt. Apl. 1794.

SEDUM rupeſtre.

Rock Stonecrop.

**DECANDRIA Pentagynia.*

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5, with five nectariferous ſcales at the baſe of the germen. *Capſules* 5.

SPEC. CHAR. Leaves thick, ſubulate, cluſtered together in a five-fold order, and looſe at the baſe. Flowers in a cyme.

SYN. Sedum rupeſtre. *Linn. Sp. Pl.* 618. *Hudſ. Fl. An.* 195. *With. Bot. Arr.* 466.

S. minus a rupe S. Vincentii. *Raii Syn.* 270.

ORIGINALLY obſerved on St. Vincent's rocks, near Briſtol hot-wells, and afterwards on Chedder rocks by Dillenius, and on a hill in Wales. Mr. Robſon found it on walls about Darlington, from whence he ſent us this wild ſpecimen, flowering in July 1792.

The roots are perennial, branched, and throw out many long decumbent ſtems, which are round, red and naked in their lower part, taking root in many places; above they are alternately branched, terminating in thick club-ſhaped tufts of leaves, cloſely imbricated. The flowering ſtems are more upright, a foot high, clothed with more ſcattered leaves, and terminated by a large handſome cyme of yellow flowers. The calyx is very glaucous, often tipped with red. Flowers often in 6 or 7 parts inſtead of 5. All the eaves are glaucous, thick and ſucculent, ſubulate, unconnected with the ſtem at their baſe, which is like a little blunt ſpur; they are more compreſſed, and much more cloſely imbricated than in S. reflexum, neither are they ever recurved as in that ſpecies.

Dillenius firſt well aſcertained this plant in his Hortus Elthamenſis, where he has given a good figure of it, *tab.* 256, *f.* 333.

Flora Danica, *tab.* 59, is a very different plant, the Sedum ſaxatile of Wiggers, *Flo. Holſat.* 35.

SEDUM rupeſtre.

Rock Stonecrop.

DECANDRIA Pentagynia.

Gen. Char. Cal. 5-cleft. Petals 5, with five nectariferous ſcales at the baſe of the germen. Capſules 5.

Spec. Char. Leaves thick, tubulate, cluſtered together in a five-fold order, and looſe at the baſe. Flowers in a cyme.

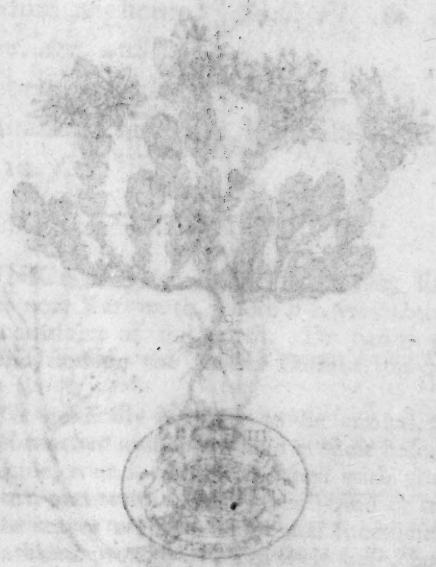
Syn. Sedum rupeſtre. Linn. Sp. Pl. 618. Huds. Fl. Ab. 195. With. Bot. Arr. 466.

S. minus a rupe S. Vincentii. Raii Syn. 270.

ORIGINALLY obſerved on St. Vincent's rocks, near Briſtol hot-wells, and afterwards on Cheddar rocks by Dillenius, and on a hill in Wales. Mr. Roſſlon found it on walls about Darlington, from whence he ſent us this wild ſpecimen, flowering in July 1752.

The roots are perennial, branched, and throw out many long deciduous fibres, which are round, red and naked in their lower part, taking root in many places; above they are alternately branched, terminating in thick club-ſhaped tufts of leaves, cloſely imbricated. The flowering ſtems are more upright, a foot high, cloathed with more ſcattered leaves, and terminated by a large ſhrubbine cyme of yellow flowers. The calyx is very glaucous, often tipped with red. Flowers often in 6 or 7 parts inſtead of 5. All the leaves are glaucous, thick and fucculent, fubulate, ſpurnacated with the ſtem at their baſe, which is like a little ſpur; they are more compreſſed, and grow more cloſely imbricated than in S. rellexum, nearly as they ever recurvat as in that ſpecies.

Dillenius has well aſcertained this plant in his Horti Elthamenſis, where he has given a good figure of it, tab. 69. f. 80. Ioan Bauhin, vol. 3, is a very different plant, the Sedum ſaxatile of Wiggers, Fl. Holm. 35.



T. Sowerby del.t Apl.1 1794.

SEDUM anglicum.

Engliſh Stone-crop.

DECANDRIA Pentagynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5, with 5 nectariferous ſcales at the baſe of the germen. *Capſules* 5.

SPEC. CHAR. Leaves thick, ovate, gibbous and looſe at the baſe, alternate. Cyme of two branches.

SYN. Sedum anglicum. *Hudſ. Fl. An.* 196. *With. Bot. Arr.* 468.

S. rubens. *Lightf. Fl. Sc.* 235.

S. minimum non acre, flore albo. *Raii Syn.* 270. *t.* 12. *f.* 2.

COMMUNICATED by Dawſon Turner, Eſq. from the ſandy downs near Yarmouth, where it is very abundant, as well as on the mountains of the north. Dr. Smith gathered it in Weſtmoreland, and on the rock of Dumbarton-caſtle in Scotland.

The root is generally ſuppoſed to be annual, throwing out many ſtems, branched and decumbent at their baſe, then upright and more ſimple, round, reddiſh, clothed with alternate rather thick-ſet leaves, and terminated by ſmall bifid or trifid cymes of flowers The leaves are very thick and ſucculent, oval, glaucous, with a blunt protuberance at their baſe, below their attachment to the ſtem. The flowers are at firſt thickly cluſtered together; but as the cyme expands, they appear more remote, one always ſtanding at the firſt divarication of the cyme. The calyx reſembles the leaves, and is obtuſe. The petals have a reddiſh rib, and are often ſpotted with the ſame colour at their tip. The capſules are membranous and ſmooth.

This ſpecies has coſt us no ſmall trouble to determine accurately. Of the plants which approach it, Sedum annuum of Linnæus has a yellow flower, and much ſhorter and broader leaves. S. atratum has leaves like S. annuum, and very blunt purple capſules, with red and white petals. Craſſula rubens has a ſharper calyx than our plant, and rough, ſpreading, ſtrong (not membranous) capſules. Mr. Hudſon and Mr. Lightfoot were therefore right in making this a ſpecies diſtinct from all thoſe of Linnæus.

SEDUM anglicum.

English Stone-crop.

DECANDRIA Pentagynia.

Gen. Char. Cal. 5-cleft. Petals 5, with 5 nectariferous scales at the base of the germen. Capsules 5.

Spec. Char. Leaves flat, ovate, gibbous and loose at the base, alternate. Clime of two branches.

Syn. Sedum anglicum. Raij. Pl. Ang. 196. Hudf. Ang. 168.

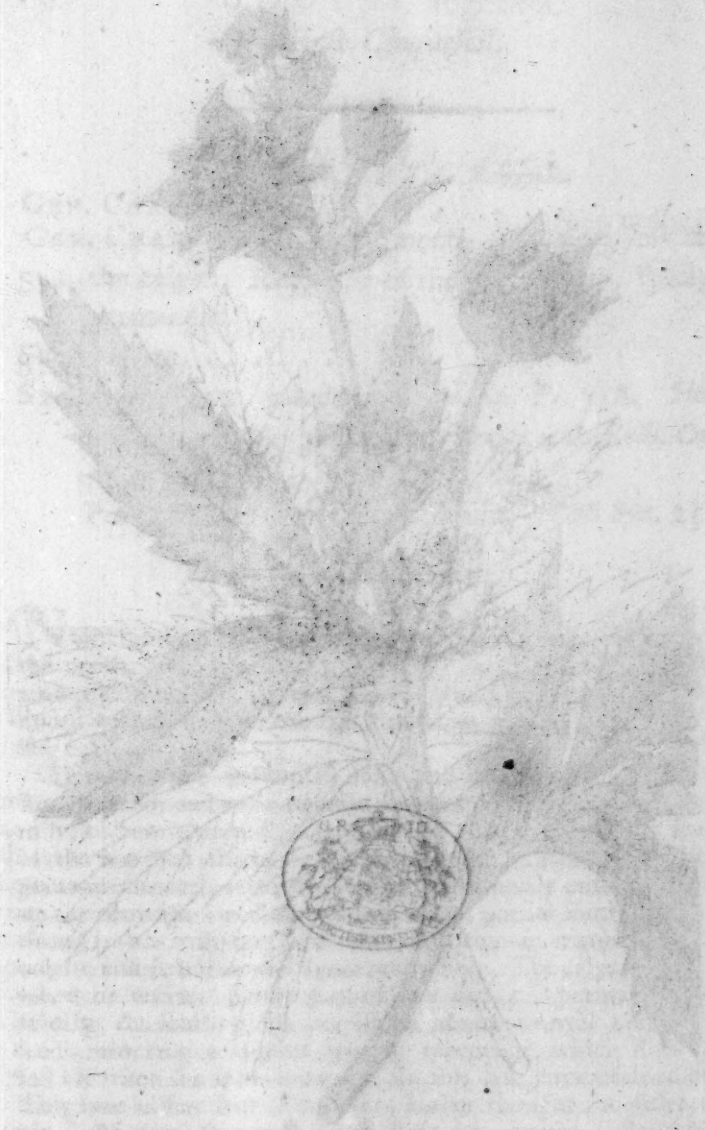
S. rubens. Lightf. Fl. Scot. 485.

S. minimum non acre, flore albo. Raij Syn. 270.

COMMUNICATED by Dawson Turner, Esq. from the sandy downs near Yarmouth, where it is very abundant, as well as on the mountains of the north. Dr. Smith gathered it in Westmoreland, and on the rock of Dumbarton-castle in Scotland.

The root is generally supposed to be annual, throwing out many fibres, branched and decumbent at their base, then upright and more or less round, reddish, clothed with alternate rather thick-set leaves, and terminated by small bifid or trifid cymose flowers. The leaves are very thick and fucculent, oval, glaucous, with a blunt protuberance at their back, below their attachment to the stem. The flowers are at first thickly clustered together, but as the cymæ expands, they appear more remote, one always standing at the first divarication of the cymæ. The calyx resembles the leaves, and is obtuse. The petals have a reddish tip, and are often tipped with the same colour at their tip. The capsules are mostly five and smooth.

This species has cost us no small trouble to determine accurately. Of the plants which approach it, Sedum annuum of Linnæus has a yellow flower, and mucilaginous and broader leaves. S. anglicum has leaves like S. annuum, and very blunt purple capsules, with red and white petals. Crassula rubens has a thinner calyx than our plant, and rough, spreading, strong (not membranous) capsules. Mr. Hudson and Mr. Lightfoot were therefore right in making this a species distinct from all those of Linnæus.



J.ᵐ Sowerby delᵗ Apl 1 1794

COMARUM paluſtre.

Marſh Cinquefoil.

ICOSANDRIA Polygynia.

GEN. CHAR. *Cal.* in 10 ſegments. *Petals* 5, leſs than the calyx. *Receptacle* of the ſeeds ovate, ſpongy, permanent.

SPEC. CHAR. . . . . .

SYN. Comarum paluſtre. *Linn. Sp. Pl.* 718. *Hudſ. Fl. An.* 227. *With. Bot. Arr.* 540. *Relh. Cant.* 200.

Pentaphylloides paluſtre rubrum. *Raii Syn.* 256.

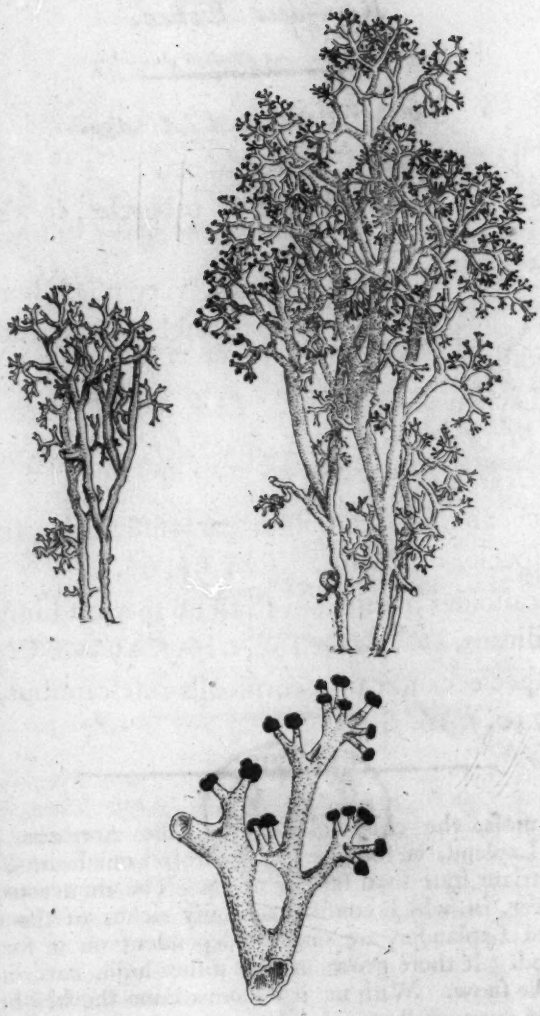
NOT unfrequent in muddy bogs and ditches, eſpecially in the north, and in Norfolk, flowering in June and July. It is among our more handſome native plants, and may be introduced with advantage among American ſhrubs, in a border of bog earth.

The roots are perennial, long and creeping, and, like the ſtem, round, and of a reddiſh brown. The leaves are generally, but not always ſmooth: leaflets moſtly five, rarely ſeven, in the top leaf three, more or leſs obtuſe, ſtrongly ſerrated, glaucous beneath, with a pair of ſtipulæ (moſtly entire) running up the common leaf-ſtalk. Flowers on partial footſtalks, produced in an irregular, ſomewhat dichotomous manner. Their colour and ſtructure our figure expreſſes. The calyx leaves are lobed or entire. Every part of the flower is permanent, enfolding the fruit, which conſiſts of numerous oval compreſſed ſeeds, covering a conical ſpongy receptacle, which does not fall off when the ſeeds are ripe. In this laſt circumſtance only the genus differs from Fragaria. Haller thought the difference too ſlight, and therefore joins theſe two genera, along with Potentilla, into one. But Linnæus well obſerves, in Flora Lapponica *(ſec.* 209*)*, that the genera of this natural order are all very nearly allied (the order being *ſo* natural), and that we muſt either keep them as he has defined them, or unite the above with Rubus, Roſa, Geum, Dryas, &c. into one, which would be very paradoxical.

COMARUM palustre.

LICHEN rangiferinus.

Reindeer Liche.



J.d Sowerby delt Ap.l 1794

LICHEN rangiferinus.

Rein-deer Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, ſcattered warts.

Female, ſmooth ſhields or tubercles, in which the ſeeds are imbedded.

SPEC. CHAR. Shrubby, tubular, very much branched, and hoary; the little branches divaricated and nodding.

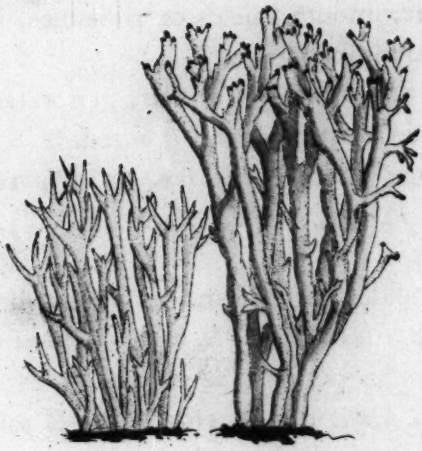
SYN. Lichen rangiferinus. *Linn. Sp. Pl.* 1620. *Hudſ. Fl. An.* 557. *With. Bot. Arr. V.* 3. 216. *Relh. Cant.* 438.

Lichenoides tubuloſum ramoſiſſimum, fruticuli ſpecie, candicans. *Raii Syn.* 66.

Coralloides montanum fruticuli ſpecie ubique candicans, *Dill. Muſc.* 107. *t.* 16. *f.* 29.—& C. frutic. ſpecie candicans, corniculis rufeſcentibus, *ibid.* 110. *t.* 16. *f.* 30.

THIS moſs, the chief clothing of the northern alpine tracts of Lapland, is found every where on our heaths, but in a leſs luxuriant ſtate than farther north. The numerous herds of rein-deer, in which conſiſts the only riches of the ſimple ſequeſtered Laplander, are entirely dependent on it for their winter food. It there grows at leaſt a foot high, covering the ground like ſnow. With us it ſeldom attains the height of 6 inches, and is generally much leſs.

The ſpecies is eaſily known by its branched and tufted figure. Its ſurface is hoary, or rough with minute warts. It is tubular within, and the ſtem thin and brittle when very dry or very wet. Dillenius juſtly ſays, it is not perforated at the divarications. Hagen (quoted by Mr. Relhan) mentions the contrary. The variety β of Hudſon, called *ſylvaticus* (fig. 30 of Dillenius), is a trifling one, having reddiſh or browniſh tips, which colour ſometimes occurs in other parts of the plant. The fructification is not common. It conſiſts of brown tubercles.



J.t Sowerby Del.t Apl. 1.1794

LICHEN uncialis.

Short perforated Lichen

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, ſcattered warts.
Female, ſmooth ſhields or tubercles, in which the ſeeds are imbedded.

SPEC. CHAR. Shrubby, tubular, perforated; the little branches very ſhort and pointed.

SYN. Lichen uncialis. *Linn. Sp. Pl.* 1621. *Hudſ. Fl. An.* 555. *With. Bot. Arr. V.* 3, 218. *Relh. Cant.* 439.
Lichenoides tubuloſum, cauliculis mollioribus & craſſioribus, majus & minus. *Raii Syn.* 67.
Coralloides perforatum majus, molle & craſſum. *Dill. Muſc.* 98. *t.* 16. *f.* 21—& minus, molle & tenue. *Ibid.* 99, *f.* 22.

LICHEN uncialis is found on heaths nearly as common as rangiferinus, from which it differs in being much leſs branched, and not tufted; the branches are ſhorter and awl-ſhaped, the terminal ones brown, and forming a ſort of radiated crown, of ſometimes 6 or 8 points. The perforations at the divarications of the ſtem are very wide, and ſeldom wanting; whereas in rangiferinus they are ſcarcely (if at all) to be found. The fructifications are very minute tubercles at the tips of the little brown terminal branches.

This plant varies in height from 1 to 2 inches, as well as in thickneſs; hence the different ſpecies and varieties of authors. Sometimes it has a few ſcaly leaves on the ſtem, and is much branched, ſee Mr. Hudſon's variety γ——perhaps the laſt may be a diſtinct ſpecies.

LICHEN uncialis.

Shaggy perforated Lichen

CRYPTOGAMIA Alga.

Gen. Char. Mal, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

Spec. Char. Shrubby, tubular, perforated; the little branches very short and pointed.

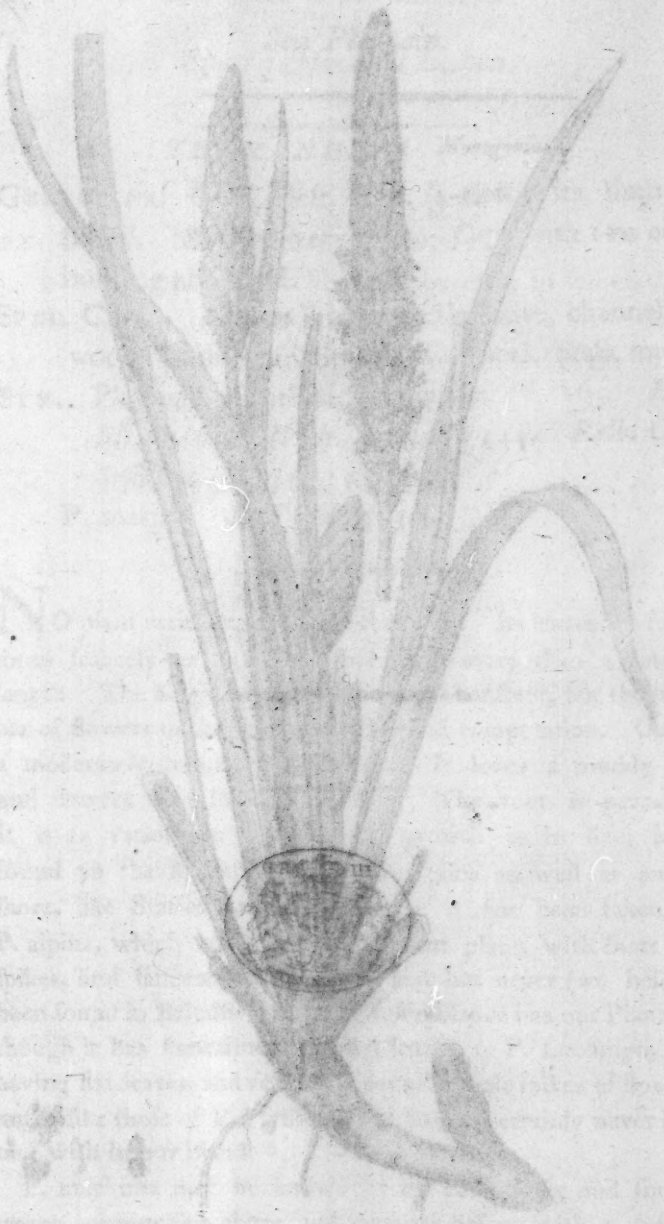
Syn. Lichen uncialis. Linn. Sp. Pl. 1621. Huds. Fl. Ang. 555. With. Bot. Arr. N. 3, 218. Relh. Cant. 419.

Lichenoides tubuliformi, cauliculis mollioribus & cruciformibus; majus & minus. Raii Syn. 67.

Coralloides perforatum majus, molle & cruciatum. Dill. Musc. 98. t. 16. f. 21—& minus, molle & tenue. Ibid. 99. f. 22.

LICHEN uncialis is found on beaths nearly as common as rangiferinus, from which it differs in being more branched, and not tufted; the branches are shorter and awl-shaped, the terminal ones brown, and forming a short reflected crown, of fourteen or eighteen points. The perforations in the divisions of the stem are very wide, and seldom wanting; whereas in rangiferinus they are scarcely (if at all) to be found. The fructifications are very minute tubercles at the tips of the little brown terminal branches.

This plant varies in height from one to a inches, as well as in thickness; hence the different species and varieties of authors. Sometimes it has a few leafy leaves on the stem, and is much branched, for Mr. Hudson's variety γ——perhaps the last may be a distinct species.



J.e Sowerby del.t May 1 1794.

PLANTAGO maritima.

Sea Plantain.

TETRANDRIA Monogynia.

GEN. CHAR. *Cal.* 4-cleft. *Cor.* 4-cleft; its limb reflexed. *Stamina* very long. *Capſ.* with two cells, burſting all round.

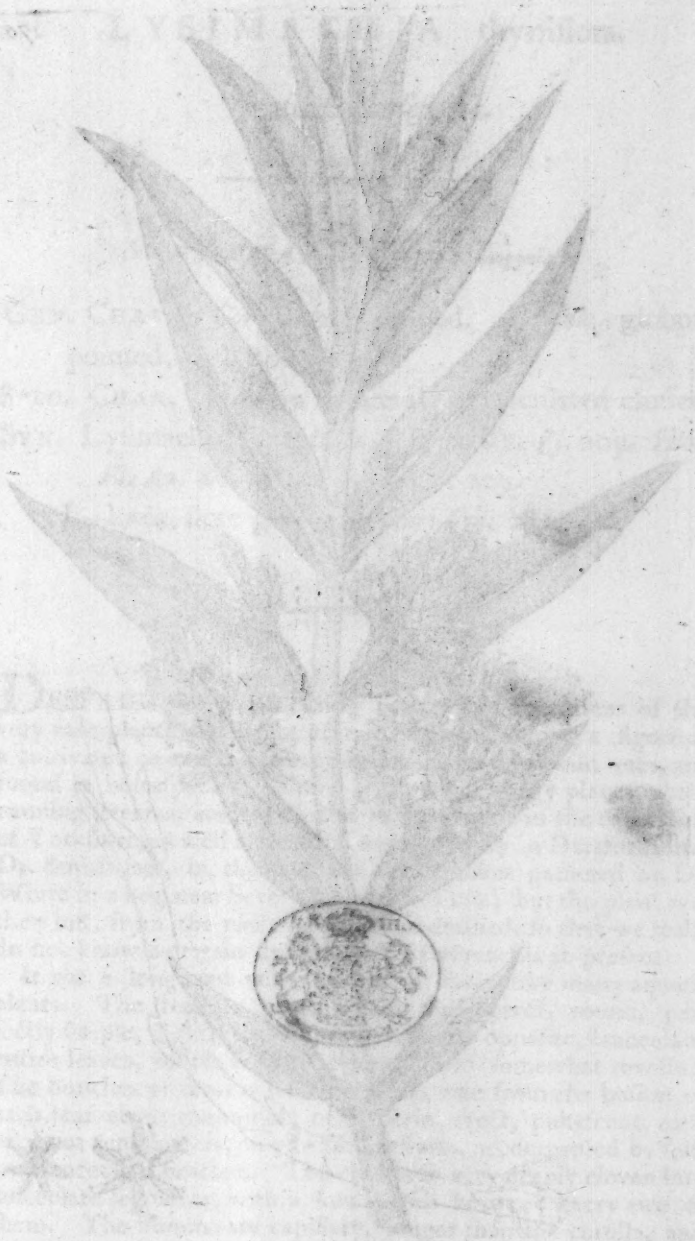
SPEC. CHAR. Leaves linear, moſtly entire, channelled, woolly at the baſe. Spike cylindrical. Stalk round.

SYN. Plantago maritima. *Linn. Sp. Pl.* 165. *Hudſ. Fl. An.* 64. *With. Bot. Arr.* 144. *Relh. Cant. Suppl.* 2. 9.

P. marina. *Raii Syn.* 315.

NO plant varies more in ſize than this. Its leaves are ſometimes ſcarcely an inch, at other times more than a foot in length. The height of the ſtalk is more conſtant, but the number of flowers in the ſpike varies beyond computation. Ours is a moderately luxuriant ſpecimen. It loves a muddy ſoil, and flowers late in the ſummer. The root is perennial. It is as various in its place of growth as in ſize, being found on the higheſt of our mountains as well as on the ſhore, like Statice armeria. Hence it has been taken for P. alpina, which laſt is a very different plant, with ſhort oval ſpikes, and lanceolate flat leaves, and has never (we believe) been found in Britain. Still leſs reſemblance has our Plantago, though it has ſometimes dentated leaves, to P. Loeflingii, that having flat leaves, and very ſhort roundiſh pale ſpikes of flowers, much like thoſe of P. Pſyllium, and having certainly never been met with in our iſland.

P. maritima may be known by its very fleſhy and ſmooth eaves, channelled above and concave below, with a tuft of wool at their baſe, which indeed occurs in other ſpecies. The ſpike, however ſhort, is always cylindrical.



J. Sowerby del. et sc. 1794.

LYSIMACHIA thyrſiflora.

Tufted Looſeſtrife.

PENTANDRIA Monogynia.

GEN. CHAR. *Cor.* wheel-ſhaped. *Capſule* globoſe, pointed, with 10 valves.

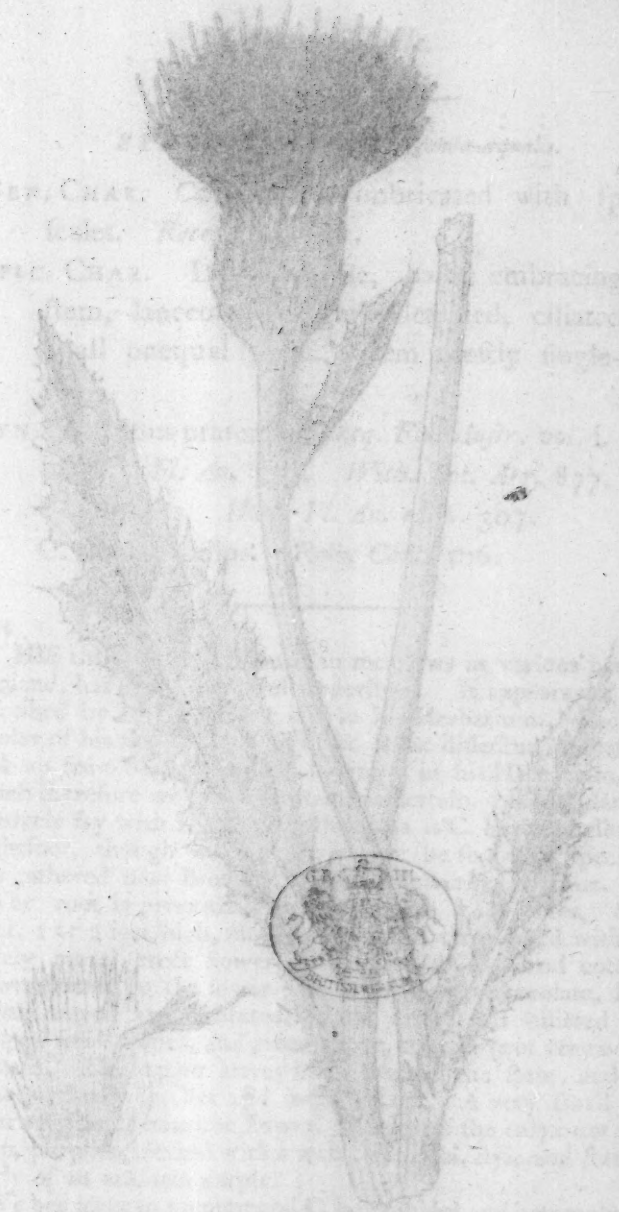
SPEC. CHAR. Flowers in lateral pedunculated cluſters.

SYN. Lyſimachia thyrſiflora. *Linn. Sp. Pl.* 209. *Hudſ. Fl. An.* 86. *With. Bot. Arr.* 209.

L. lutea, flore globoſo. *Raii Syn.* 283.

DESPAIRING of procuring recent wild ſpecimens of this very rare plant, we cannot refrain from exhibiting a figure of a cultivated one, which has been compared with wild ones, and found in no reſpect to differ. It grows in boggy places, about running ſtreams, and was found in Ray's time in the eaſt riding of Yorkſhire, as well as about King's Langley in Hertfordſhire. Dr. Smith ſaw, in the year 1781, ſpecimens gathered by Dr. White in a bog near Severus's hills at York; but the plant was then loſt, from the place having been drained, ſo that we really do not know a certain ſtation of this Lyſimachia at preſent.

It has a long root with whorls of fibres like many aquatic plants. The ſtem 10 or 20 inches high, erect, round, perfectly ſimple, ſlightly woolly, covered with oppoſite, lanceolate, entire leaves, which are pale beneath, and ſomewhat revolute. The bunches of flowers ſtand oppoſite, one from the boſom of each leaf about the middle of the ſtem, erect, pubeſcent, each of about ten flowers, on partial footſtalks, accompanied by ſolitary lanceolate bracteæ. The corolla is very deeply cloven into lanceolate ſegments, with a ſmall tooth between every two of them. The ſtamina are capillary, longer than the corolla, and oppoſite to its ſegments. Style ſimple. The calyx, germen, and tips of the corolla are prettily ſpotted with red. It flowers about midſummer, and may be eaſily known from all other Britiſh vegetables.



J. Sowerby del. et fec. April 1793.

CARDUUS pratenſis.

Meadow Thiſtle.

SYNGENESIA Polygamia-æqualis.

GEN. CHAR. *Cal.* ovate, imbricated with ſpinous ſcales. *Receptacle* hairy.

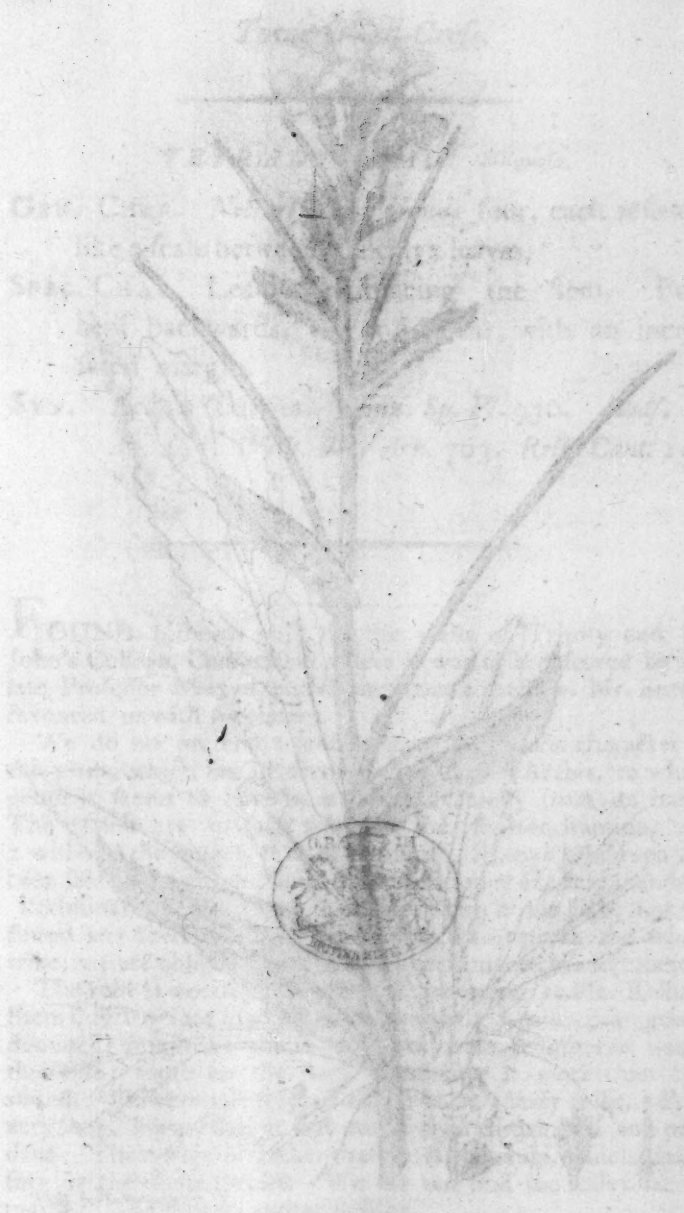
SPEC. CHAR. Leaves ſeſſile, half embracing the ſtem, lanceolate, ſlightly dentated, ciliated with ſmall unequal ſpines. Stem moſtly ſingle-flowered.

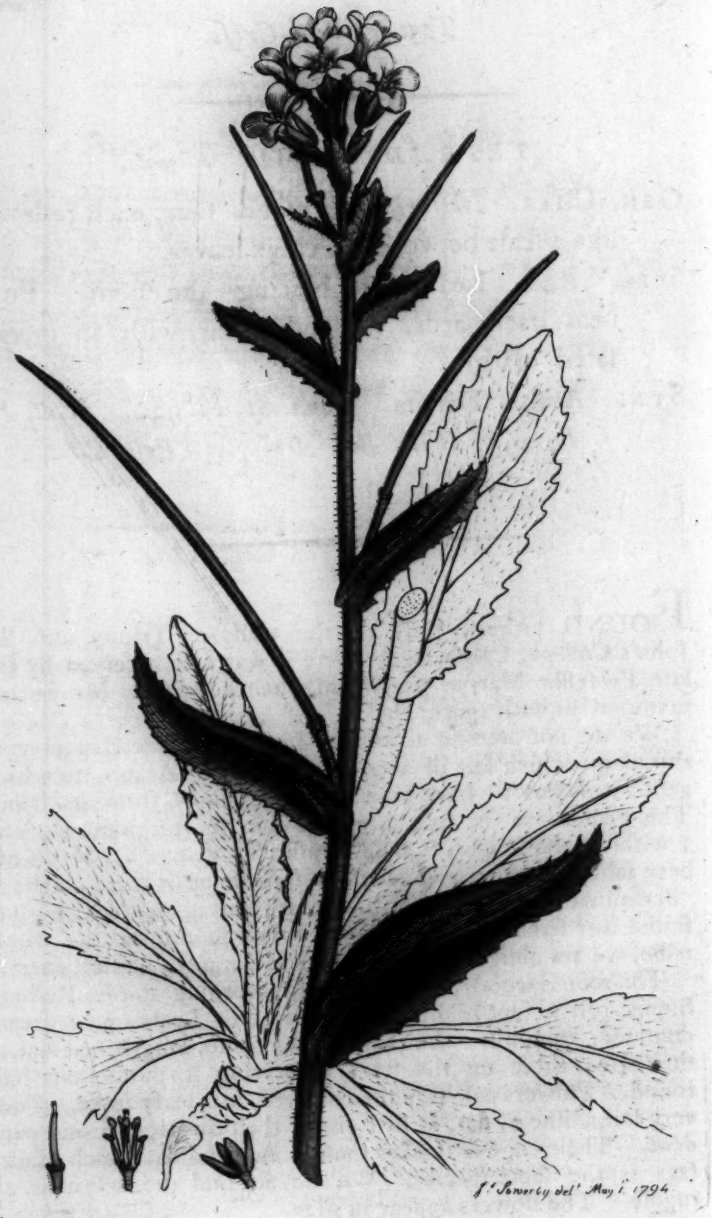
SYN. Carduus pratenſis. *Jacq. Flo. Auſtr. vol.* i. *t.* 42. *Hudſ. Fl. An.* 353. *With. Bot. Arr.* 877.
C. diſſectus. *Hudſ. Fl. An. ed.* 1. 307.
C. heterophyllus. *Relh. Cant.* 306.

THIS thiſtle, though found in meadows in various parts of England, has never been well underſtood. It appears not to be deſcribed by Linnæus, nor is it in his Herbarium. The only ſpecies of his that it can poſſibly be is the diſſectus, a plant he took up from books, without having it in his Herbarium, and which therefore we cannot certainly aſcertain. Neither dare we poſitively ſay with Dr. Stokes, that this is C. heterophyllus of Lightfoot, though we ſuppoſe it may be ſo. Our ſpecimen was gathered near Bromley in Kent, flowering in June.

The root is perennial, creeping, with long fibres. Stem erect, 1 or 2 feet high, moſtly ſimple, and terminated with one (rarely more) erect flower, its ſurface ſtriated and cottony. Leaves ſeveral at the lower part of the ſtem, lanceolate, ſome ſlightly waved and dentated, others entire, all ciliated with unequal ſmall ſpines, and green above, cottony (not very white) beneath. The upper leaves half embrace the ſtem, and become gradually ſmaller and more diſtant. A very ſmall one generally ſtands near the flower. Scales of the calyx not very ſharp, purpliſh, clothed with a web. Corolla, ſtyle and ſtamina nearly of an uniform purple.

We beg leave to recommend C. helenioides and heterophyllus to the examination of Britiſh botaniſts, as the ſpecimens in the Linnæan Herbarium appear really diſtinct ſpecies.




J.t Sowerby del.t May 1. 1794

ARABIS Turrita.

Tower Wall-Creſs.

TETRADYNAMIA Siliquoſa.

GEN. CHAR. *Nectariferous glands* four, each reflexed like a ſcale between the calyx leaves.

SPEC. CHAR. Leaves embracing the ſtem. Pods bent backwards, flat and linear, with an incraſſated margin.

SYN. Arabis Turrita. *Linn. Sp. Pl.* 930. *Hudſ. Fl. An.* 293. *With. Bot. Arr.* 703. *Relh. Cant.* 255.

FOUND hitherto only on the walls of Trinity and St. John's College, Cambridge, where it was firſt obſerved by the late Profeſſor Martyn, and from whence the Rev. Mr. Sutton favoured us with ſpecimens.

We do not pretend to anſwer for the generic character of this plant, which but ill accords with that of Arabis, to which genus it ſeems to have been referred chiefly from its habit. The glands are in fact 2 within the ſhorter ſtamina, and 2 without the longer, "as in Braſſica" (*Martyn*). Much has been ſaid and written about the inſufficiency of theſe glands to diſcriminate the genera of this order; but as we have not yet found any fixed principles upon which to reform the whole tribe, we are obliged to take things as Linnæus has left them.

The root is woody, and biennial, according to Mr. Relhan. Stems full a foot high, ſimple, upright. Leaves pale green, dentated, roughiſh; the radical ones ovate, lengthened out at the baſe; thoſe on the ſtem embracing it more than half round. Flowers pale ſulphur-coloured, in a leafy ſpike. Pods very long, linear, flat, at firſt erect, then divaricated and pendent. Their edge is thicker than in A. pendula, which Haller ſays is the ſame ſpecies. We do not find the calyx at all rugoſe. The flowers appear in May.

J. Sowerby del. et sc. May 1794.

PYRUS Malus.

Wild Apple, or Crab-tree.

ICOSANDRIA Pentagynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Apple* inferior, with 5 cells, and ſeveral ſeeds.

SPEC. CHAR. Leaves ſerrated. Flowers in a ſeſſile umbel.

SYN. Pyrus Malus. *Linn. Sp. Pl.* 686. *Hudſ. Fl. An.* 216. *With. Bot. Arr.* 517. *Relh. Cant.* 191. Malus ſylveſtris. *Raii Syn.* 452.

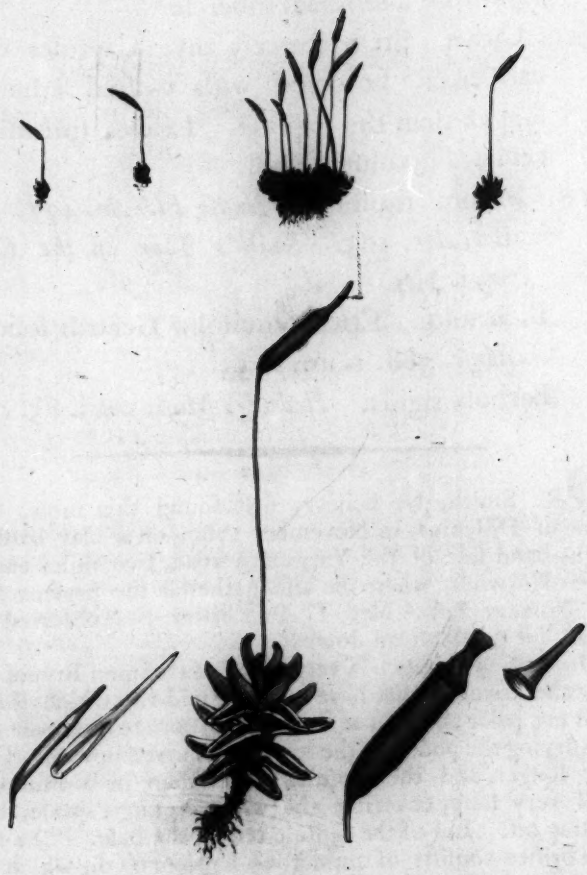
THE common original of all our valuable varieties of apples grows wild in almoſt every natural grove or thicket, nor is it unfrequent in hedges. When about the end of May it is covered with bloom, few if any ſhrubs ſurpaſs the crab in beauty. Its elegant roſe-colour bears a greater proportion to the white than in any cultivated variety, except the codling.

The tree is of a moderate ſize, diſtinguiſhable from our foreſt trees, when without leaves, by its very irregular branches, and particularly its ſhort, knobby, and rugged bearing ſhoots, from which alone the leaves and flowers are produced. The leaves are roundiſh, or oval; their ſerratures diſappear ſometimes by cultivation, but not ſo completely as in the pear-tree. The flower-ſtalks form a ſimple terminal umbel, and are rarely ſubdivided. They are moſtly covered with ſoft down, as is the inſide (and ſometimes the outſide) of the calyx. Fruit ſmall, hard, and very acid, yelloviſh green with a tinge of red.

The wood is hard, with a fine grain. The acid liquor of the fruit, called verjuice, is uſeful to cure ſprains and ſcalds. See Dr. Withering's conciſe and full account of the uſes of this and the pear-tree.

PYRUS Malus.

Wild Apple, or Crab-tree.



J. Sowerby del. Mayf. 1801.

BRYUM rigidum.

Rigid Bryum.

CRYPTOGAMIA Muſci.

GEN. CHAR. *Capſule* with a lid. *Veil* ſmooth. *Flower-ſtalk* from a terminal tubercle.

SPEC. CHAR. Stem ſcarcely any. Capſules cylindrical, erect, bordered with twiſted ciliæ. Veil longer than the capſule. Leaves ſpreading, lanceolate, involute, rigid.

SYN. Bryum rigidum. *Hudſ. Fl. An.* 477. *With. Bot. Arr.* 105. *Smith's Tour on the Continent, vol.* i. 191.

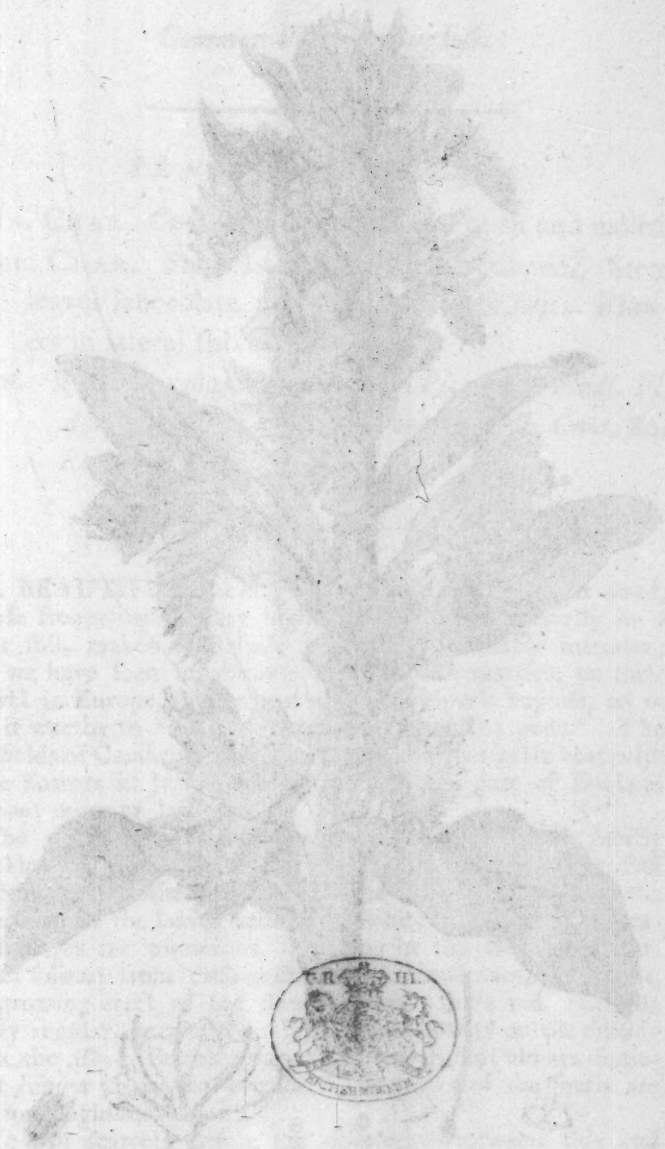
B. acaulon, Ericæ tenuifoliæ Gerardi folio. *Dill. Muſc.* 388. *t.* 49. *f.* 55.

Barbula rigida. *Hedwig. Muſc. vol.* i. 65. *t.* 25.

DR. Smith, we believe, firſt found this moſs, ſince the time of Dillenius, in November 1780, on a clay bank on the right-hand ſide of the Yarmouth road, two miles and an half from Norwich, where he alſo gathered the preſent ſpecimen in January laſt. Mr. T. F. Forſter has obſerved it in a chalk-pit on Banſtead downs.

Its firſt appearance is very like the common Bryum murale, but the leaves of that have a ſtrong mid-rib, which this wants, and are paler and thin at the margin, nor are they ever involute. By drying the points of the leaves are curved inwards. The ſtalks are longer, and the capſules larger than in B. murale. The veil very long, covering the whole young capſule, but ſoon falling off. Lid of the capſule red at the baſe. The fringe of the orifice conſiſts of numerous hairs or teeth, which Hedwig found to be 32 in number. They are twiſted into a cylinder.

How much ſoever we may admire the accuracy of obſervation, and phyſiological acuteneſs of the celebrated author laſt mentioned, we think the characters of his genera rather too minute and artificial. At leaſt we beg leave to retain for the preſent thoſe of Linnæus, though very imperfect, till repeated obſervations enable us to judge more correctly upon ſo abſtruſe a ſubject.


E.R. III.

Fr. Sansby del.t June 1 1794.

ECHIUM vulgare.

Common Viper's Bugloſs.

PENTANDRIA Monogynia.

GEN. CHAR. *Cor.* irregular, its orifice open and naked.

SPEC. CHAR. Stem briſtly and tuberculated. Stem leaves lanceolate, and rough with ſtiff hairs. Flowers in lateral ſpikes.

SYN. Echium vulgare. *Linn. Sp. Pl.* 200. *Hudſ. Fl. An.* 83. *With. Bot. Arr.* 200. *Relh. Cant.* 80. *Raii Syn.* 227.

A BEAUTIFUL and magnificent, though very vulgar weed, whoſe frequency in every high-way and field, eſpecially in a light ſoil, makes us deſpiſe it as an unprofitable intruder; yet we have ſeen inhabitants of tropical countries, on their arrival in Europe, ſo charmed with the viper's bugloſs, as to call it worthy to "decorate the gardens of the gods." The dry fields of Cambridgeſhire and Norfolk are perfectly blue with theſe flowers in June and July, nor is any part of England without more or leſs of them.

The root is biennial. Stem ſtrong, erect, round, moſtly ſprinkled with red tubercles bearing ſome of the very ſtiff briſtles which clothe every part of the herb, and which on the upper ſide of the leaves ariſe from white calloſities. The radical leaves are numerous, ſpreading in the form of a ſtar. Spikes ſolitary from each axilla of the ſtem-leaves, pendulous, but growing erect as the flowers open. Buds red. Corolla nearly regular, purple, then bright blue, downy on the outſide about the ribs. Stamina varying in length, but always ſomewhat longer than the corolla. The juices of the herb are very mucilaginous.

We can ſcarcely define the difference between this and E. italicum (for in this caſe the Linnæan characters unfortunately teach nothing), except that the ſtalk of the latter ſeems not to be tuberculated, and the flowers are not half ſo large as in E. vulgare.

ECHIUM vulgare.

Common Viper's Bugloss.

G R III

LEPIDIUM latifolium.

Broad-leaved Pepper-wort.

TETRADYNAMIA Siliculoſa.

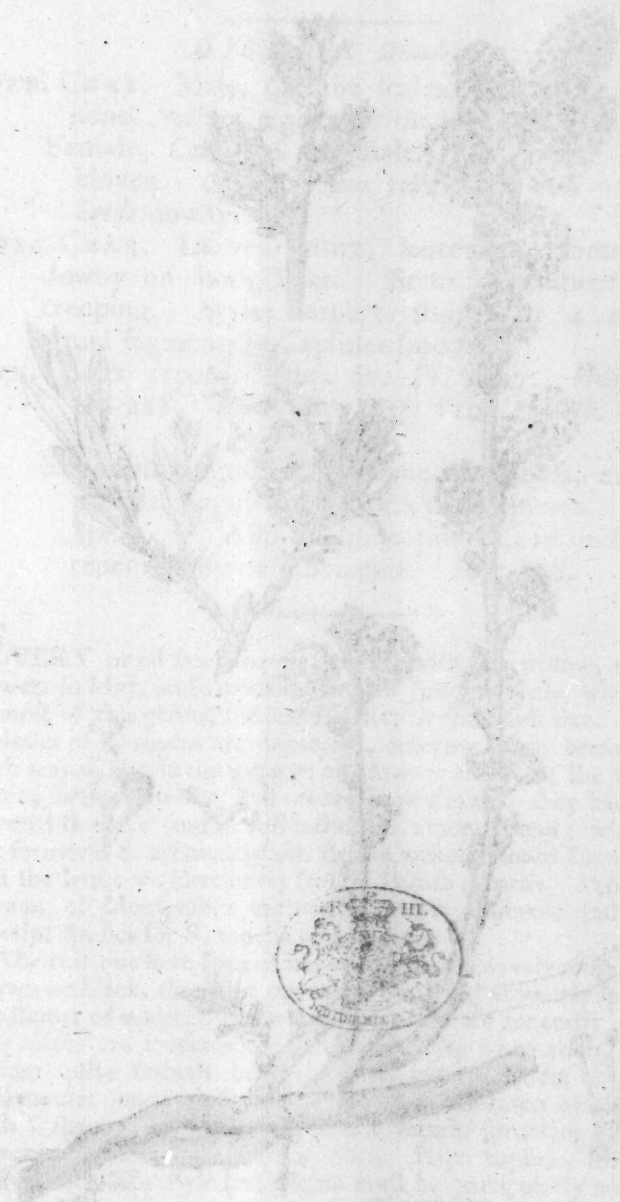
GEN. CHAR. *Pouch* notched, with many ſeeds: valves keeled, but not margined: partition contrary to the valves.

SPEC. CHAR. Leaves ovato-lanceolate, undivided, ſerrated.

SYN. Lepidium latifolium. *Linn. Sp. Pl.* 899. *Hudſ. Fl. An.* 279. *With. Bot. Arr.* 671. *Raii Syn.* 304.

GATHERED wild at Heybridge, near Maldon in Eſſex, by Mr. Edward Forſter, jun. in the place mentioned by Ray. It has been found in other parts of Eſſex, always in wet ſhady ſituations, and the late Mr. Humphrey diſcovered it below Sheringham cliffs in Norfolk. Otherwiſe it is by no means common.

Root perennial, long, branching, and ſpreading very far. Stems erect, alternately branched, leafy, round, ſmooth, panicled at the top with numerous branches of ſmall whitiſh flowers in little corymbi, appearing in July. The leaves are alternate, acute, of a broad lanceolate figure, lengthened out at the baſe and the tip, ſerrated in the middle, glaucous, eſpecially beneath. Their taſte is biting and diſagreeable. An infuſion is ſaid by Dr. Withering to be emetic.



F. Sansedoni fanciè 1794

SALIX repens.

Creeping dwarf Willow.

DIOECIA Diandria.

GEN. CHAR. Male, *Cal.* the ſcales of a catkin, *Cor.* none. *Nectary*, a gland at the baſe of the ſtamina. Female, *Cal.* like the male. *Cor.* none. *Style* cloven. *Capſ.* of one cell, with two valves. *Seeds* downy.

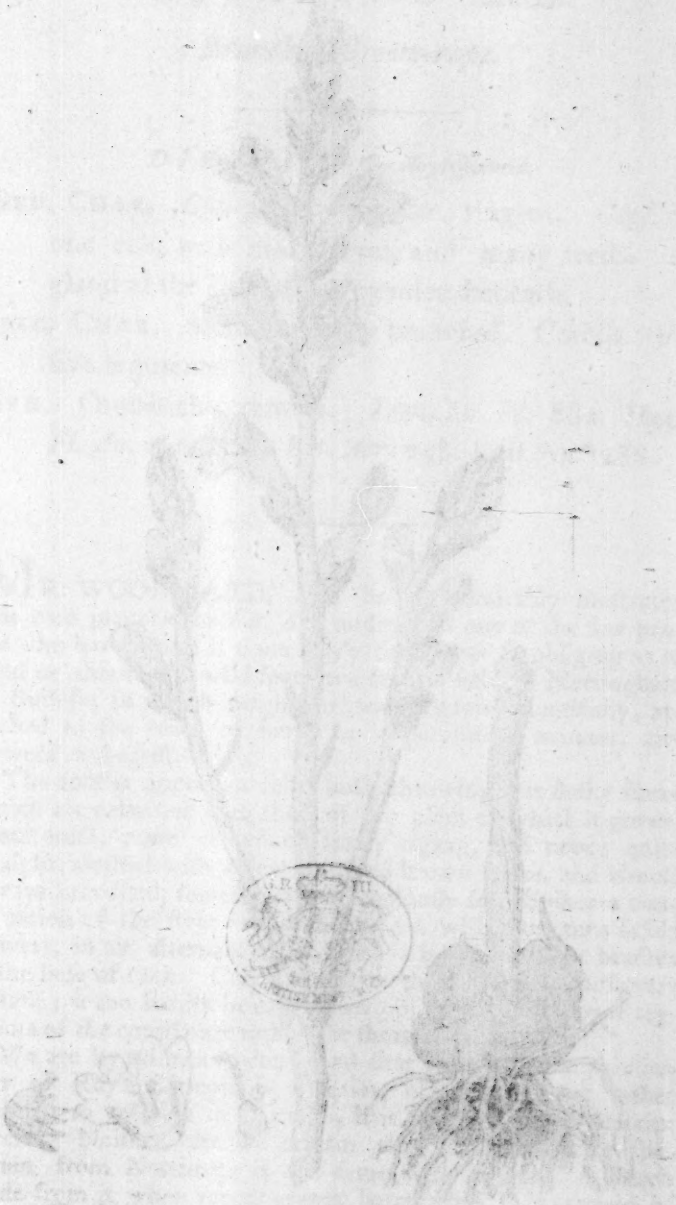
SPEC. CHAR. Leaves entire, lanceolate, ſomewhat downy on both ſides. Stem decumbent and creeping. Style ſimple; ſtigma in 4 nearly equal ſegments. Capſules ſmooth.

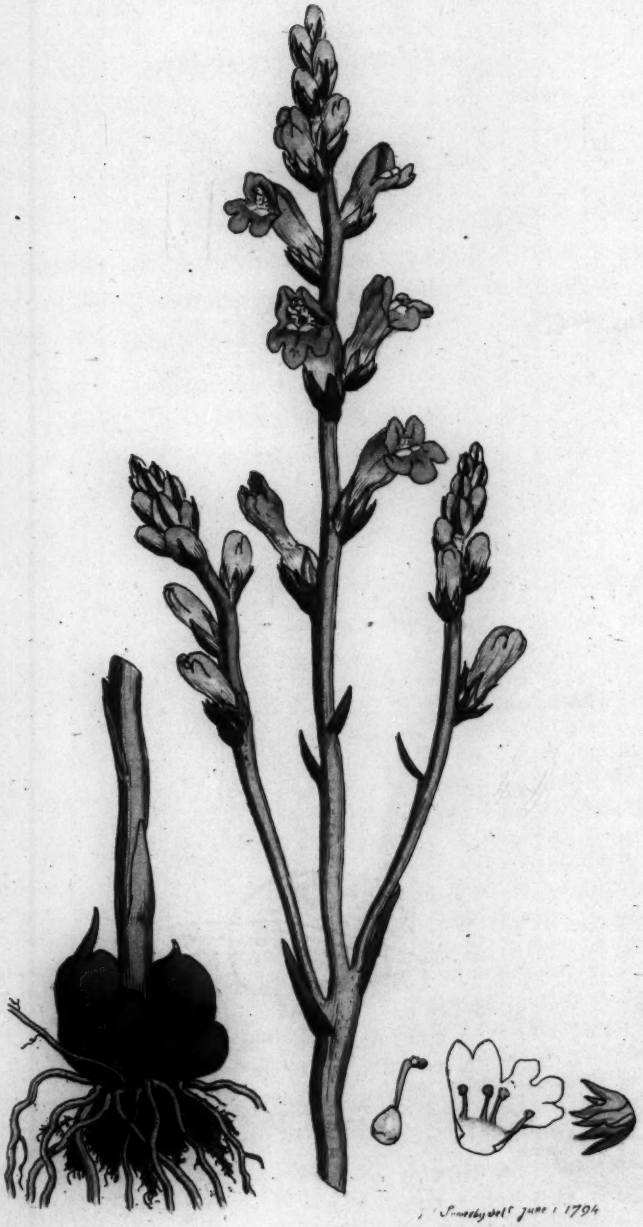
SYN. Salix repens. *Linn. Sp. Pl.* 1447. *Hudſ. Fl. An.* 428. *With. Bot. Arr.* 1105. *Relh. Cant.* 366.

S. pumila anguſtifolia, inferne lanuginoſa, and S. pumila anguſtifolia prona parte cinerea. *Raii Syn.* 447. Alſo S. alpina pumila, rotundifolia repens, inferne ſubcinerea. *Ibid.* 448.

EVERY moiſt ſandy heath abounds with this willow, which flowers in May, and ripens its fruit in June and July, when, as in moſt of this genus, the leaves arrive at their full ſize. The varieties of S. repens are numerous, differing in the breadth of their leaves, and in the greener or browner colour of the whole plant; hence Hudſon and others have thought they had diſcovered S. fuſca and S. roſmarinifolia among them; whereas the former is S. arenaria of our Britiſh writers (not of Linnæus), and the latter we have never ſeen of Britiſh growth. Profeſſor Gouan of Montpellier miſtook a widely different and non-deſcript ſpecies for S. repens of Linnæus.

The real one here figured has a very ſtrong woody root, dark, brown or black, throwing out many proſtrate or widely ſpreading ſtems, of which the flowering branches are generally erect. The leaves are lanceolate or elliptical, ſilky when young, and ſeldom quite ſmooth beneath when old; without ſtipulæ. Catkins not long; ſcales obtuſe, hairy. Germen oval, ſilky, with a ſhort undivided ſtyle, and a yellow ſpreading ſtigma, cloven almoſt equally into 4 lobes. Ripe capſule, ſmooth, lanceolate. The ſtyle and ſtigma muſt be particularly noticed in diſcriminating ſome of theſe ſmall willows; indeed we ſtand in need of every help in ſo difficult a tribe.





Sowerby del.t June 1.1794

OROBANCHE ramoſa.

Branched Broom-rape.

DIDYNAMIA Angioſpermia.

GEN. CHAR. *Cal.* 2-lipped. *Cor.* ringent. *Capſ.* of one cell, with two valves, and many ſeeds. A gland at the baſe of the germen beneath.

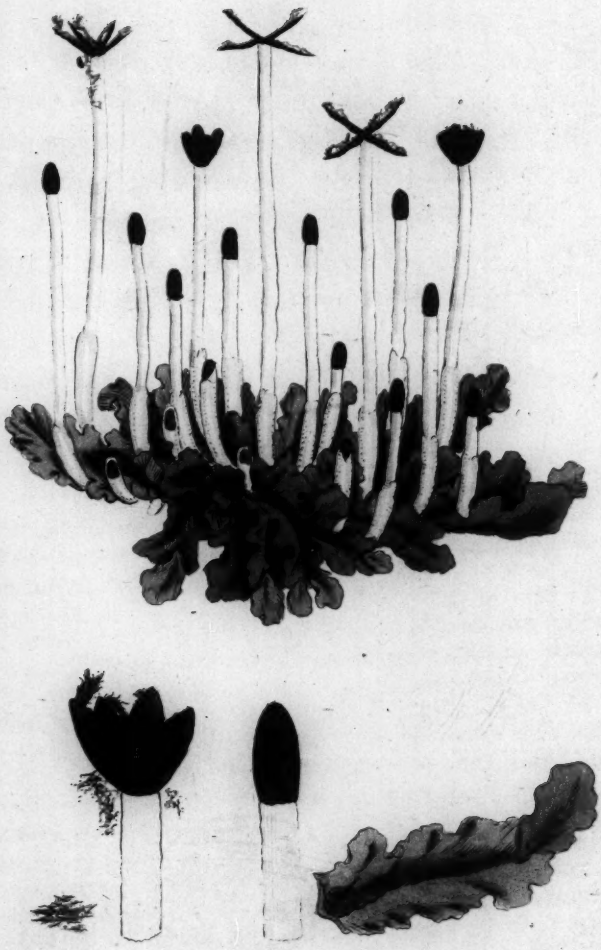
SPEC. CHAR. Stem generally branched. Corolla with five ſegments.

SYN. Orobanche ramoſa. *Linn. Sp. Pl.* 882. *Hudſ. Fl. An.* 266. *With. Bot. Arr.* 658. *Raii Syn.** 288.

MR. WOODWARD, who has ſo admirably illuſtrated this rare plant in the *Bot. Arr.* and who is one of the few people who have found it ſince Ray's time, was ſo obliging as to ſend us this recent wild ſpecimen from a field at Mettingham in Suffolk, in which neighbourhood it grows plentifully, attached to the roots of hemp in a paraſitical manner, and flowers in Auguſt.

The root is annual, a ſolid bulb, throwing out fleſhy fibres which are entwined with thoſe of the plant on which it grows. Stem erect, more or leſs obſcurely zigzag, and never quite ſtraight, clothed with a few ſcattered brown ſcales, and almoſt always branched, ſometimes very copiouſly ſo. Spikes a continuation of the ſtem and branches, ſet with numerous ſeſſile flowers, in an alternate order, with a brown concave bractea at the baſe of each. Calyx with 4 teeth, the 2 uppermoſt very diſtant; it can hardly be called two-lipped. The 2 upper ſegments of the corolla are rather the ſhorteſt.

We are by no means convinced that the *Orobanche flore minore* of Ray's Synopſis is a variety of this, but are rather inclined to refer it to O. major, if it be not a non-deſcript ſpecies. Neither are we certain that Mr. Pitchford's ſpecimen from Northreps is the ſame with either. A ſketch made from it when recent agrees better with O. purpurea of Jacquin (not Linnæus). The whole genus wants a thorough inveſtigation.



JUNGERMANNIA pinguis.

Slippery Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile. (Hedwig.)

Female on a footſtalk riſing from a ſheath. Capſule with 4 valves. Seeds attached to elaſtic filaments.

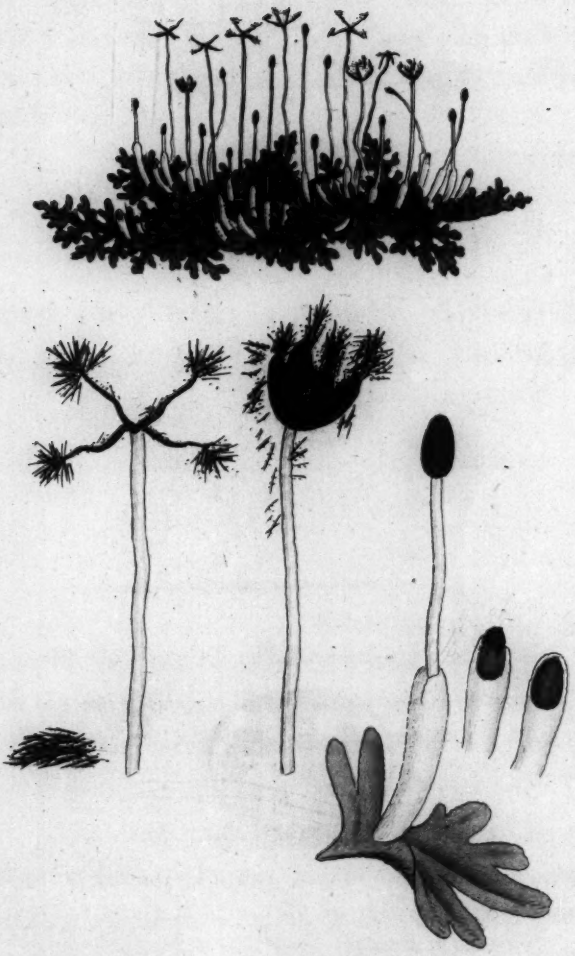
SPEC. CHAR. Stem none. Frond oblong, ſinuated, ſlippery.

SYN. Jungermannia pinguis. *Linn. Sp. Pl.* 1602. *Hudſ. Fl. An.* 517. *With. Bot. Arr. V.* 3. 156. *Relh. Cant.* 420.

Lichenaſtrum capitulis oblongis juxta foliorum diviſuras enaſcentibus. *Raii Syn.* 110. *Dill. Muſc.* 509. *t.* 74. *f.* 42.

FOUND in boggy, marſhy places, commonly producing its ripe capſules in April; this forward ſeaſon (1794), it has been ſomewhat earlier. When very luxuriant, it grows erect in thick tufts, and does not flower; otherwiſe the fronds are horizontal, attached to the moiſt earth by hair-like fibres, and of a very wet, ſlimy, ſlippery ſubſtance, tender like boiled vegetables. From the inciſions of the frond ariſe ſolitary tubular ſheaths, each producing an upright ſimple pellucid ſtalk, terminated by a black oval capſule, called *anthera* by Linnæus, which burſts at the top into 4 valves, and is full of black elaſtic fibres, connected with numerous ſeeds.

We beg leave to point out an inaccuracy in the character of this genus in the *Bot. Arr.* as taken from Linnæus. It ſhould be *Fruit-ſtalk bearing a naked flower*, that is, deſtitute of *calyx* and *corolla*. The Linnæan word *Anthera* is indeed properly changed for *Capſule*; but, by a ſtrange overſight, the deſcription of the real *male* flower is continued as if it were the *female*.



JUNGERMANNIA multifida.

Many-lobed Jungermannia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male flowers ſeſſile.

Female on a footſtalk riſing from a ſheath. Capſule with 4 valves. Seeds attached to elaſtic filaments.

SPEC. CHAR. Stem none. Frond bipinnatifid.

SYN. Jungermannia multifida. *Linn. Sp. Pl.* 1602. *Hudſ. Fl. An.* 517. *Witb. Bot. Arr. V.* 3. 155.

Lichenaſtrum Ambroſiæ diviſura. *Raii Syn.* 111. *Dill. Muſc.* 511. *t.* 74. *f.* 43.

THIS was gathered on Epping Foreſt, by Mr. E. Forſter. It loves a moiſt ſhady ſituation like J. pinguis, but is not near ſo common. It flowers about the ſame time.

The fronds grow proſtrate, and are cut into many obtuſe irregular ſegments in a bipinnate order, their ſurface ſomewhat ſlimy to the touch. From towards their baſe ariſe ſolitary flower-ſtalks, clothed at the bottom with a white ſheath, and terminating in a dark brown capſule, which quickly ſcatters its ſeeds, retaining at the laſt a few fibres ſticking to the extremity of its expanded withered valves, as in other ſpecies.

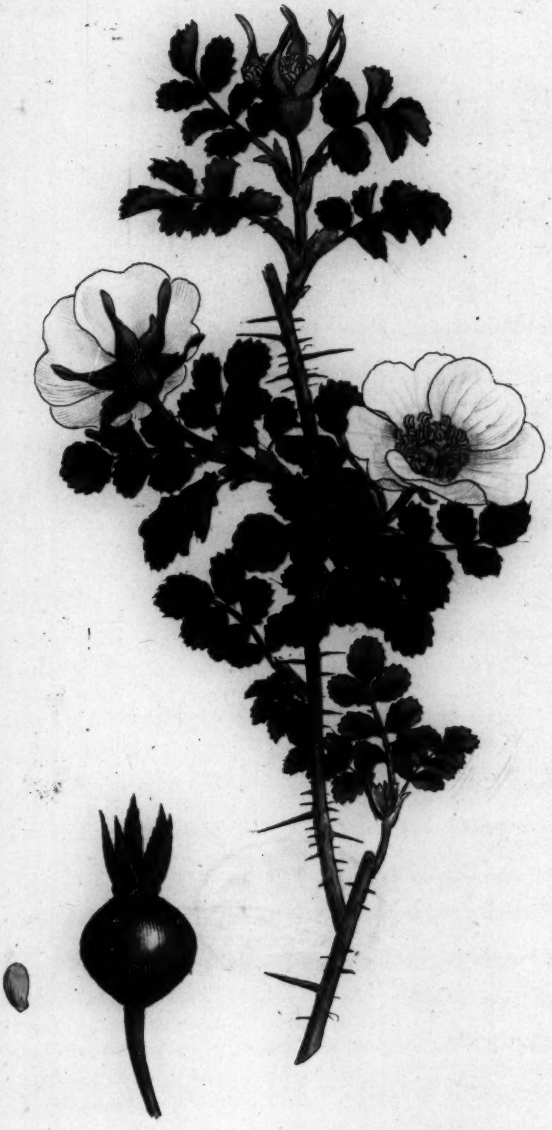
JUNGERMANNIA multifida.

Many-lobed Jungermannia.

THIS was gathered on Epping Forest, by Mr. E. Forster. It loves a moist shady situation like J. pumila, but is not near so common. It flowers about the same time.

The fronds grow prostrate, and are cut into many obtuse irregular segments in a digitate order, their surface somewhat shiny to the touch. From towards their back arise foliary flower-stalks, clothed at the bottom with a white sheath, and terminating in a dark brown capitule, which quickly scatters its seeds, retaining at the last a few fibres sticking to the extremity of its expanded withered valves, as in other species.

G R III



Jn.° Somerby del.t July 1.st 1794

ROSA ſpinoſiſſima.

Burnet Roſe.

ICOSANDRIA Polygynia.

GEN. CHAR. *Cal.* urn-ſhaped, fleſhy, contracted at the orifice, terminating in 5 ſegments. Petals 5. *Seeds* ſeveral, briſtly, fixed to the inſide of the calyx.

SPEC. CHAR. Fruit globoſe, ſmooth as well as the flower-ſtalks. Stem clothed with very numerous ſtraight ſlender ſpines. Leaflets ſmooth and round.

SYN. Roſa ſpinoſiſſima. *Linn. Sp. Pl.* 705. *Hudſ. Fl. An.* 218. *With. Bot. Arr.* 522. *Lightf. Fl. Sc.* 260. *Fl. Dan. t.* 398.

R. pimpinellifolia. *Linn. Syſt. Nat. ed.* 10. 1062.

R. pumila ſpinoſiſſima, foliis Pimpinellæ glabris, flore albo. *Raii Syn.* 455.

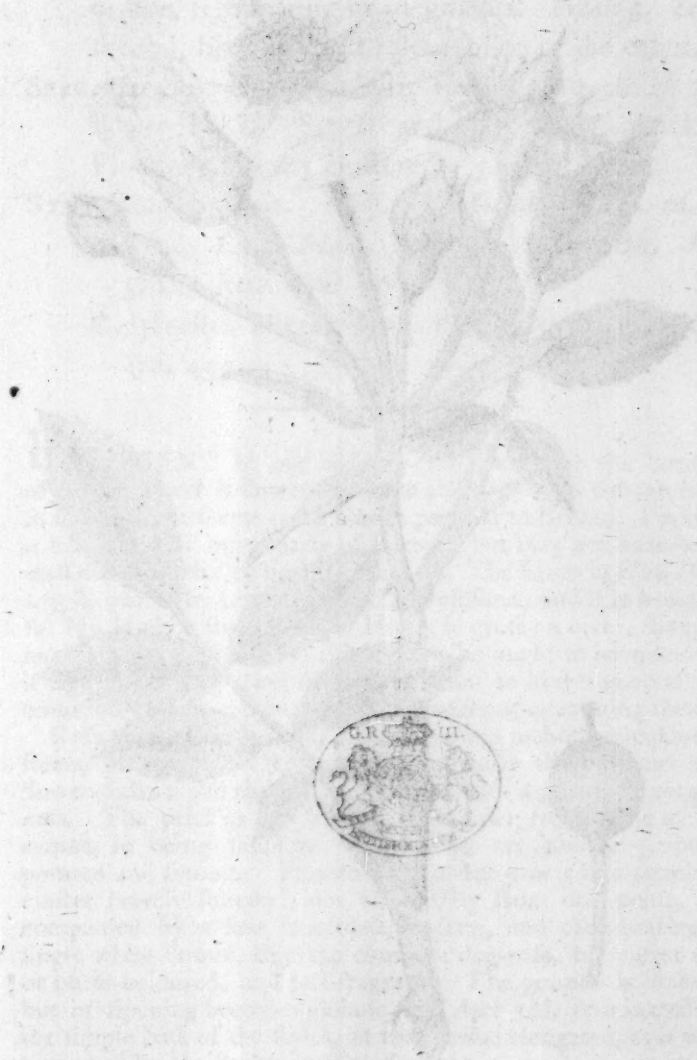
ROSES, the delight of gardeners, of poets, in ſhort of all who have ever conſidered any plant as an object of admiration, and which compoſe perhaps the moſt elegant genus on the whole that we know, are by no means eaſily intelligible to a botaniſt. Their beautiful forms, ſo delicately varied, are yet ſo nearly allied, that the line of ſpecific diſcrimination can ſcarcely be accurately drawn. This ſpecies, indeed, is one of the moſt diſtinct; yet even this has been deſcribed twice by our great maſter. It appears from his herbarium, that his R. pimpinellifolia is exactly (as Haller believed) the ſame plant, not even a variety, as his original ſpinoſiſſima; of which, not happening to have it before him when he wrote the 10th edition of *Syſt. Naturæ*, he forgot the appearance.

It occurs with us in the borders of fields on a gravelly or ſandy ſoil, flowering in July. The buſhes are about 2 feet high, much branched, and may be known by the very numerous needle-like prickles, abundant on the young branches, but which often diſappear from the old ones. The leaflets are about 9, round, ſmooth, ſerrated, very like the leaves of burnet (Poterium Sanguiſorba); their common ſtalk is ſometimes prickly, and the flower-ſtalk more rarely ſo. Petals cream-coloured, yellow at the baſe, delicately fragrant, ſometimes (but rarely) ſtriped with red. Fruit globoſe, deep red, black when quite ripe, ſmooth, though Haller deſcribes it as ſpinous.

Fl. Dan. t. 398. is this plant, and not R. arvenſis.

ROSA pinofillima.

Pinewt Rofe.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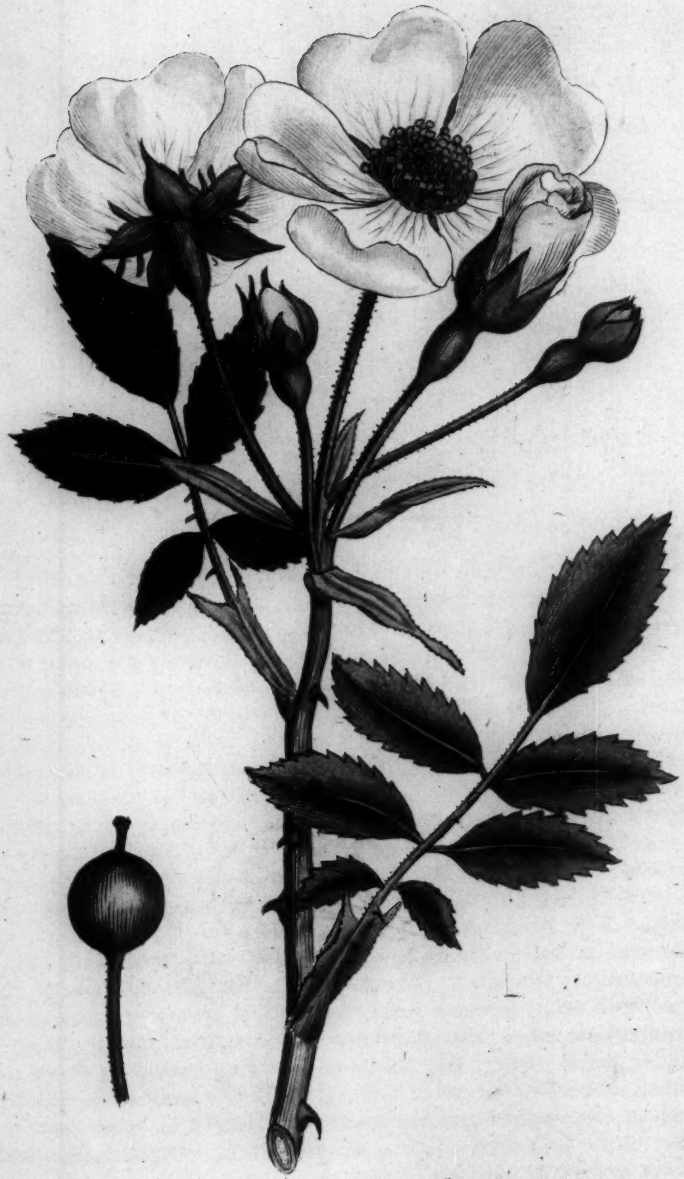


ROSA arvenſis.
White Dog-roſe.

ICOSANDRIA Polygynia.

GEN. CHAR. *Cal.* urn-ſhaped, fleſhy, contracted at the orifice, terminating in 5 ſegments. *Petals* 5. *Seeds* ſeveral, briſtly, fixed to the inſide of the calyx.

SPEC. CHAR. Fruit globoſe, ſmooth as well as the flower-ſtalks. Stem and leaf-ſtalks prickly. Flowers generally cluſtered.

SYN. Roſa arvenſis. *Hudſ. Fl. An. ed.* 1. 192. *ed.* 2. 219. *Linn. Mant.* 2. 245. *With. Bot. Arr.* 521. *Relh. Cant.* 193.

R. ſylveſtris altera minor, flore albo noſtras. *Raii Syn.* 455.

FREQUENT in our hedges, and thickets in the borders of fields, where it flowers in June and July; yet though here ſo common, it ſeems to be almoſt peculiar to Britain. Perhaps it may grow in other parts of Europe, but may not have been well diſcriminated by botanical writers. The figure in *Flora Dan. t.* 398, quoted by Linnæus, is R. ſpinoſiſſima; and it is wonderful Mr. Hudſon ſhould follow him in ſo groſs an error, though, having himſelf eſtabliſhed this ſpecies, he ought to have known it well. We beg leave on this occaſion to hint a general admonition againſt copying ſynonyms without examining them.

Roſa arvenſis has round, glaucous, often mahogany-coloured ſtems, of which laſt colour are commonly the germens and flower-ſtalks; and the laſt are covered with a glandular roughneſs. The prickles are hooked, but differ from thoſe of R. canina in being ſmaller. The leaflets are moſtly 5, oval, pointed and ſmooth. Flower-ſtalks about 3 or 5 in a terminal cluſter (rarely ſolitary), not all exactly from one point, accompanied by a few lanceolate bracteæ, and each bearing a ſingle white flower, like the common dog-roſe, but never red or bluſh-coloured, and leſs fragrant. The germen is oblong, but in ripening becomes globoſe, and deep-red, terminated by the ſimple baſe of the ſtyles, at that period elongated, as is well remarked by Dr. Stokes in *Bot. Arr.* 522.

[183]

ROSA arvensis.

White Dog-rose.

GR III.

J. Sowerby del. July 1, 1797

ARENARIA peploides.

Sea Chickweed.

DECANDRIA Trigynia.

GEN. CHAR. *Cal.* five-leaved, ſpreading. *Petals* five, undivided. *Capſ.* of one cell, with many ſeeds.

SPEC. CHAR. Leaves ovate, acute, fleſhy.

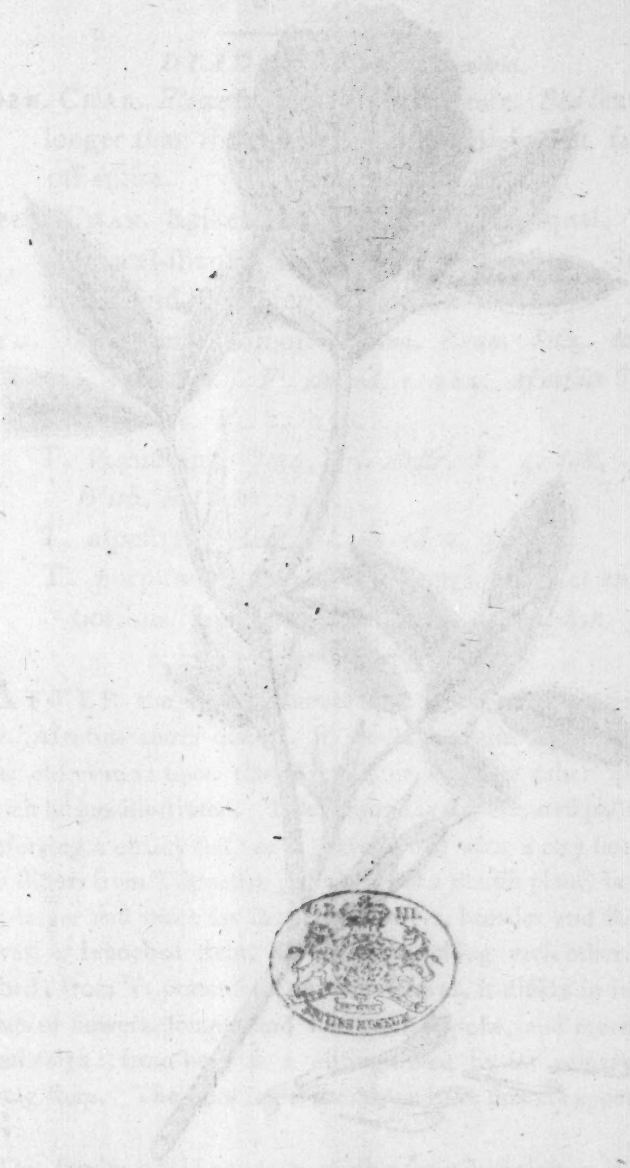
SYN. Arenaria peploides. *Linn. Sp. Pl.* 605. *Hudſ. Fl. An.* 191. *With. Bot. Arr.* 458.

Alſine marina, foliis Portulacæ. *Raii Syn.* 351.

PECULIAR to the ſandy ſhores of the ſea, but there found in abundance. Its juices partake of the alkaline nature of other ſucculent maritime plants.

The roots are ſtringy, creeping, and extend very far, throwing out fibres at every joint. Stem alternately branched, forming thick leafy procumbent tufts, angular, ſmooth and lucid, as is every part of the herb. Leaves ſeſſile, ovate, entire, ſlightly recurved, of a beautiful bright green. Flowers on ſhort foot-ſtalks, ſolitary at the diviſions of the ſtem, ſmall, white, and not very conſpicuous. Calyx quite deſtitute of ribs. Germen with a row of yellowiſh glands round its baſe. Styles very ſhort.

No other ſpecies of Arenaria can be confounded with this. It flowers about the middle of Summer, and is perennial.



T.t Sowerby del.t July 1.t 1794.

TRIFOLIUM medium.

Zigzag Trefoil.

DIADELPHIA Decandria.

GEN. CHAR. *Flowers* more or leſs capitate. *Pod* ſcarcely longer than the calyx, never burſting, but falling off entire.

SPEC. CHAR. Spikes lax. Petals nearly equal. Stipulæ awl-ſhaped and conniving together. Stems zigzag and branching. *Afzelius.*

SYN. Trifolium medium. *Linn. Faun. Suec. ed.* 2. *p.* 558. *Hudſ. Fl. An. ed.* 1. 284. *Afzelius Tr. of Linn. Soc. V.* 1. 237.

T. flexuoſum. *Jacq. Fl. Auſtr. V.* 4. *tab.* 386. *With. Bot. Arr.* 795.

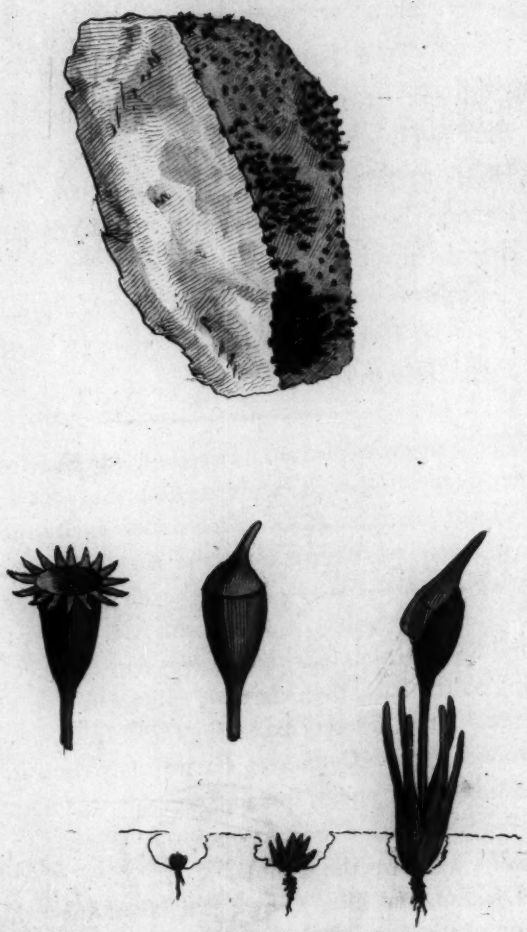
T. alpeſtre. *Hudſ. Fl. An. ed.* 2. 326.

T. purpureum majus, foliis longioribus et anguſtioribus, floribus ſaturatioribus. *Raii Syn.* 328.

AFTER the moſt elaborate and accurate diſſertation of Mr. Afzelius above quoted, it would be vain to attempt any new obſervation upon this Trefoil, or the two other ſpecies which he has illuſtrated. This is found in dry elevated paſtures, preferring a chalky ſoil, or a gravelly one with a clay bottom, and differs from T. alpeſtre (which is not a Britiſh plant) in having larger and more lax heads of flowers, broader and ſhorter leaves, a branched ſtem, ſtipulæ approaching each other, and ribbed; from T. pratenſe, Common Clover, it differs in its lax heads of flowers, longer and narrower ſtipulæ, and more unequal calyx: from both it is diſtinguiſhed by its remarkably zigzag ſtem. The root is perennial, and the flowers appear in July.

This ſpecies is ſaid not to be eligible for cultivation, as it does not thrive in a good looſe ſoil; but Prof. Martyn juſtly remarks, (Flora Ruſtica, No. 5.) that it may therefore ſucceed on ſtubborn hungry clay, like its native places of growth.

G R III



J. Sowerby del.t July 1st 1794.

BRYUM calcareum.

Chalk Bryum.

CRYPTOGAMIA Muſci.

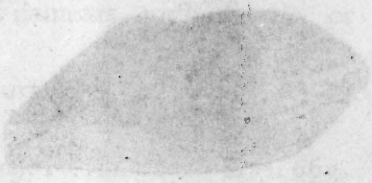
GEN. CHAR. *Capſ.* with a lid. *Veil* ſmooth. *Flower-ſtalk* from a terminal tubercle.

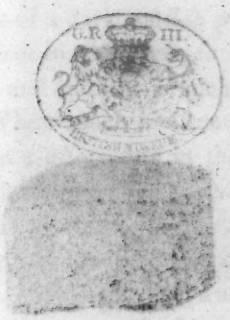
SPEC. CHAR. Stem none. Capſules erect, obconical, bordered with ſixteen ciliæ. Leaves erect, cylindrical, bluntiſh.

SYN. Bryum calcareum. *Dickſ. Crypt. Faſc.* II. 3. *t.* 4. *f.* 3. *With. Bot. Arr. V.* 3. 95. *Relh. Cant. Suppl.* III. 9.

FOUND in great plenty at Dartford, May 24, 1794, covering the ſides of the chalk-pit neareſt the weſt end of the town. Each plant grows from a minute cavity in the chalk, which it ſeems to occupy for ſome time without flowering, during which early ſtate it makes the chalk look as if clothed with bright green velvet. The plants are ſolitary; the roots ſmall and fibrous, not creeping. Leaves 6 or 8, erect, broad and ſheathing at the baſe, then narrow, cylindrical, obtuſe, ſmooth and entire. Stalk ſcarcely exceeding the leaves in length, upright, round, green. Capſule erect, inverſely conical, bordered with 16 lanceolate, equal, ſpreading teeth. Lid almoſt as long as the capſule, with a curved beak. Veil oblique, reaching about half way down the capſule.

Mr. Dickſon and Mr. Crowe firſt aſcertained this minute ſpecies on chalky ground about Newmarket heath, and the former publiſhed it in his valuable work on the new Cryptogamous plants of Great Britain, a publication of the firſt merit for originality and ſolidity of obſervation, and which proves how much a conſummate inveſtigator may detect even on the moſt beaten ground.

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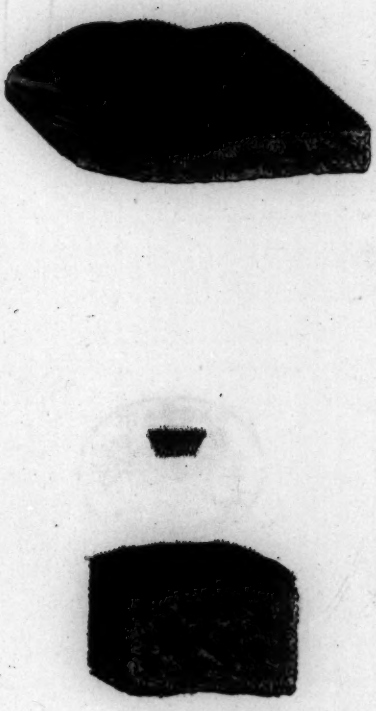


J.C Sowerby del.t July 1.st 1794.

BYSSUS purpurea.

Purple Byſſus.

CRYPTOGAMIA Algæ.

GEN. CHAR. Whole plant conſiſting of down or ſimple powder. *Fructification* unknown.

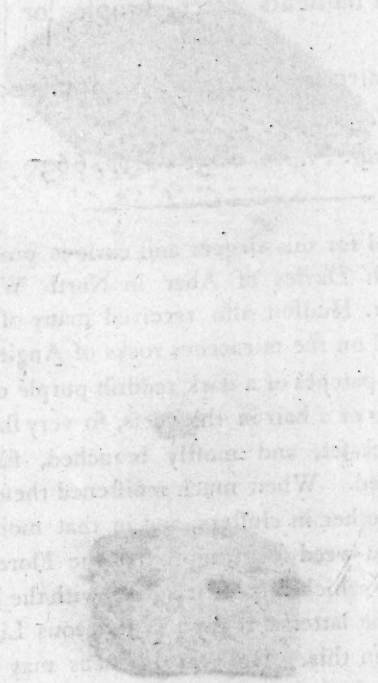
SPEC. CHAR. Filaments erect, ſimple or branched, purpliſh.

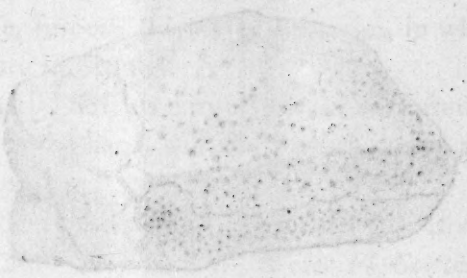
SYN. Byſſus purpurea. *Lightf. Fl. Scot.* 1000. *With. Bot. Arr. V.* 3. 276.

B. rubra. *Hudſ. Fl. An.* 605. *App.* 663.

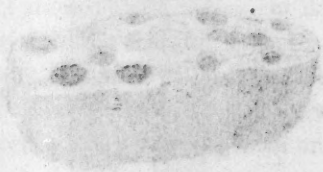
WE are obliged for this elegant and curious production to the Rev. Mr. Hugh Davies of Aber in North Wales, from whom the late Mr. Hudſon alſo received many of his rareſt plants. It is found on the micaceous rocks of Angleſea, forming broad uniform patches of a dark reddiſh purple colour, and ſcarcely the breadth of a hair in thickneſs, ſo very ſhort are the minute, erect, thick-ſet, and moſtly branched, filaments of which it is compoſed. When much moiſtened theſe filaments become clotted together in cluſters, and in that moiſt ſtate it exhales a kind of ſea-weed ſcent, more like the Florentine Iris root than violets, in which reſpect it agrees with the B. Iolithus of Linnæus; but the latter is really a cruſtaceous Lichen, and of a paler colour than this. How far Linnæus may have confounded them, or whether ours may be Micheli's *tab.* 89. *f.* 3. (it is ſurely not his *tab.* 90. *f.* 2.) we dare not determine. Ours cannot be called "*aurea*" (gold-coloured), neither is it at all cruſtaceous, but a true filamentous Byſſus. We think with Haller the powdery Byſſi are moſt probably Lichens.

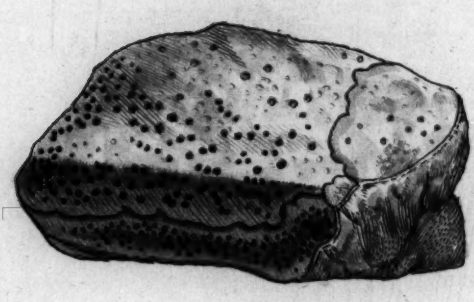
Mr. Lightfoot found his B. purpurea on the baſe of Abbot Mackinnon's tomb in Y-Columb-kill, where a naturaliſt of our acquaintance has ſince ſought for it in vain. Perhaps therefore his ſpecies may not be perennial. We quote Mr. Hudſon on his own authority, though his name *rubra* is not very appoſite.

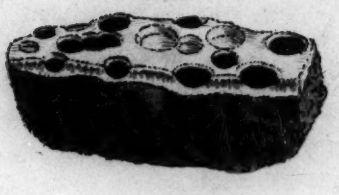




H.R.H.







F. Bauer del. Aug.t 1794.

LICHEN immerſus.

Sunk Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, ſcattered warts.
Female, ſmooth ſhields or tubercles, in which the ſeeds are imbedded.

SPEC. CHAR. Shields entirely black, each ſunk into a cavity in the hard, whitiſh, ſmooth cruſt, and deciduous.

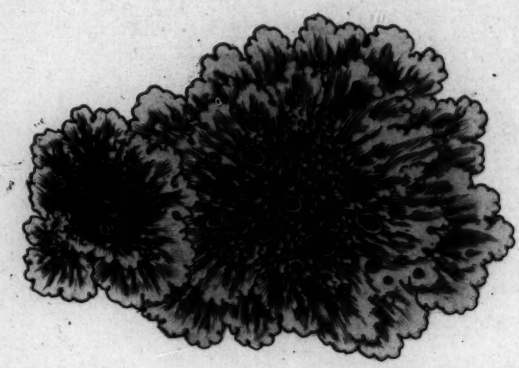
SYN. Lichen immerſus. *With. Bot. Arr.* 169. *Relh. Cant. Suppl.* I. 23. *Weber Fl. Goetting.* 188. *Smith's Tour, V.* 1. 171. *Sibth. Oxon.* 318.

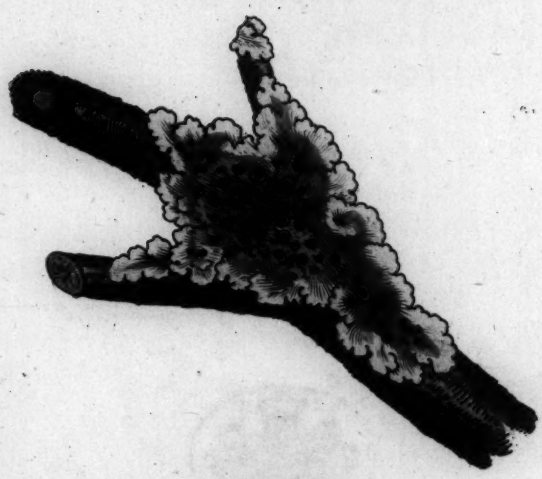
FOUND in Derbyſhire and other counties at all ſeaſons on calcareous rocks; we have not obſerved it on any other.

The cruſt is almoſt as hard as the ſtone on which it grows (though very diſtinct from it) half a line, or not ſo much, in thickneſs, nearly entire in the margin, greeniſh internally, its ſurface white, ſmooth, full of little hemiſphærical cavities of various ſizes and depths, the bottom of each of which is occupied by a black depreſſed ſmooth ſhield, with an entire margin of a more intenſe black than the diſk.

Theſe ſhields in time fall out, leaving the almoſt everlaſting cruſt full of cavities, which (if the edge of the ſpecimen be cautiouſly pared away) may often be found to extend even into the very ſubſtance of the ſtone. See Dr. Smith's Tour above quoted. Micheli mentions, p. 97, ſeveral Lichens which bear their ſhields in cavities; his No. 21 and 22 beſt agree with ours, but not having ſeen his ſpecimens we dare not poſitively quote him. We have not indeed ſeen Mr. Relhan's nor Dr. Sibthorp's L. immerſus, but there can ſcarcely be any doubt of theirs being the ſame with ours.

G.R. III.





J. Sowerby del. Aug.t 1794.

LICHEN parietinus.

Yellow Wall Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, ſcattered warts.

Female, ſmooth ſhields or tubercles, in which the ſeeds are imbedded.

SPEC. CHAR. Imbricated. Leaves criſped, obtuſe, orange-coloured, whitiſh beneath. Shields deep orange, with a paler entire margin.

SYN. Lichen parietinus. *Linn. Sp. Pl.* 1610. *Hudſ. Fl. An.* 533. *With. Bot. Arr. Vol.* 3. 186. *Relh. Cant.* 428. *Sibth. Oxon.* 326. *Lightf. Scot.* 822.

Lichenoides cruſta folioſa ſcutellata, flaveſcens. *Raii Syn.* 72.

L. vulgare ſinuoſum; foliis et ſcutellis luteis. *Dill. Muſc.* 180. *tab.* 24. *f.* 76.

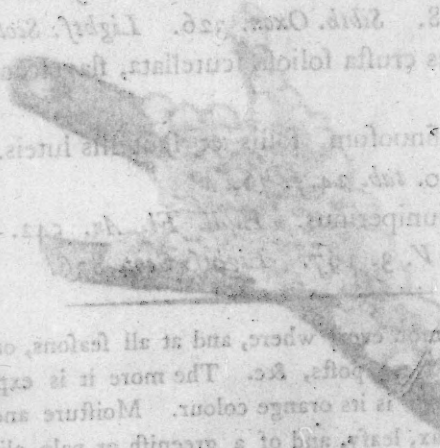
β. Lichen juniperinus. *Hudſ. Fl. An.* 542. *With. Bot. Arr. V.* 3. 197. *Lightf. Scot.* 836.

THIS is common every where, and at all ſeaſons, on walls, ſtones, trunks of trees, poſts, &c. The more it is expoſed to the ſun, the deeper is its orange colour. Moiſture and ſhade render it more lax, leafy, and of a greeniſh or pale olive hue. So it moſt commonly appears on trees and buſhes. This we have marked as a variety (β) and it is the L. juniperinus of our Britiſh writers, though by no means that of Linnæus.

The under ſide is white, eſpecially towards the centre, and adheres to bodies on which it grows by white fibres. The diviſions of the frond are more or leſs imbricated, often wrinkled, and ſometimes powdery. The ſhields numerous, their diſk either deep orange or browniſh. Lightfoot ſays this Lichen will dye yellow. Helwing formerly aſſerted that when moiſtened it would ſtain paper or linen of a beautiful and laſting fleſh-colour, a property which Dillenius could not diſcover, and which we have looked for repeatedly in vain.

LICHEN parietinus.

Yellow Wall Lichen.



EUPHORBIA paralia.

Sea Spurge.

DODECANDRIA Trigynia.

GEN. CHAR. *Cor.* of three or four petals, ſtanding on the calyx. *Cal.* of one leaf, inflated. *Capſ.* three-lobed.

SPEC. CHAR. Umbel moſtly five-branched, branches cloven. Partial flower-leaves heart-kidney-ſhaped. Leaves imbricated, erect.

SYN. Euphorbia Paralias. *Linn. Sp. Pl.* 657. *Hudſ. Fl. An.* 209. *With. Bot. Arr.* 496.
Tithymalus paralius. *Raii Syn.* 312.

ON the ſandy ſhores of the ſea in various parts of England. Mr. Lightfoot does not mention it as a native of Scotland.

The root is ſtrong, woody, and perennial. Stems numerous, about a foot high, furniſhed near the baſe with ſeveral erect leafy branches, and terminated by a large ſpreading umbel of four to ſix rays, ſet with numerous *involucra* or flower-leaves, which vary in their form from a kidney to a heart-ſhape, and accompany ſmall ſolitary flowers, with orange-coloured creſcent-ſhaped petals. The herb is rendered conſpicuous by its very glaucous colour, and its numerous imbricated leaves, concave above, and convex on their under ſide, which laſt is the only part viſible as they grow. In plants ſo circumſtanced no doubt the light acts on the *under* ſide of their leaves, though in moſt that part will not bear its influence.

This ſpecies flowers in Auguſt and September.

EUPHORBIA paralias.

Sea Spurge.

Gen. Char. Calyx of three or four petals, standing on the calyx. Capsule one-seed, inflated. Cup three-lobed.

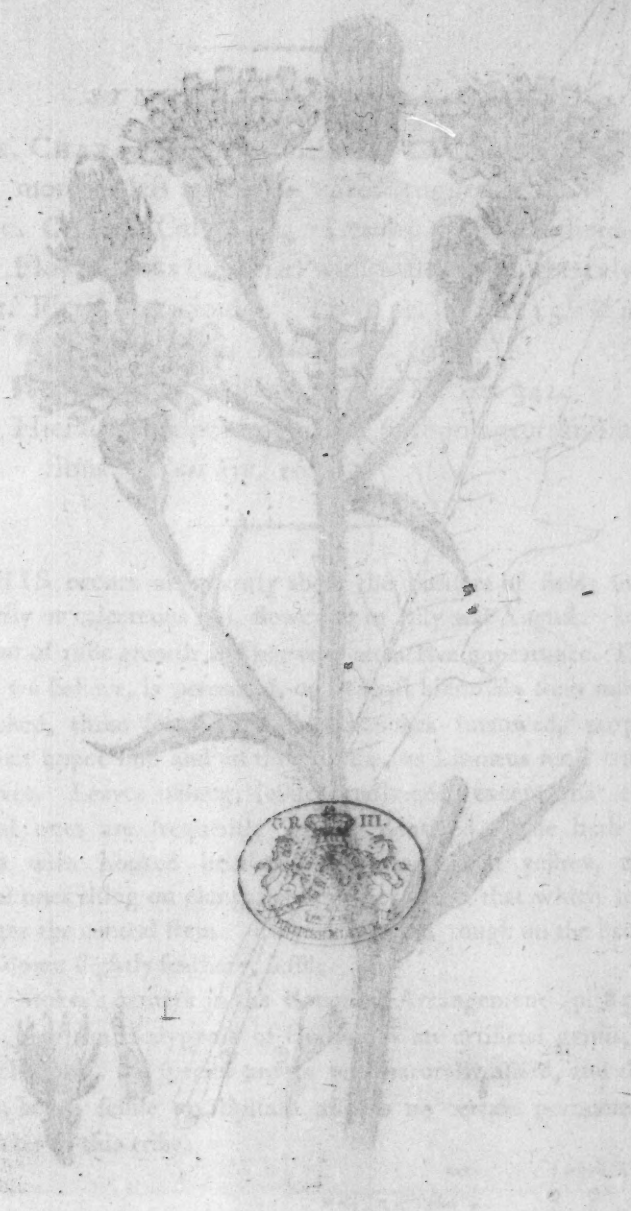
Spec. Char. Stem shrubby, two-branched, branches cloven. Partial flower-leaves heart-kidney-shaped. Leaves imbricated, ovate.

Syn. Euphorbia Paralias. Linn. Sp. Pl. 652. Huds. Fl. Ang. 209. Fl. Dan. tab. 496.
Tithymalus paralias. Lam. Syn. 312.

On the sandy shores of the sea in various parts of England. Mr. Lightfoot does not mention it as a native of Scotland.

The root is thready, and perennial. Stems numerous, about a foot high, herbaceous at the base with several erect leafy branches, and supported by a large spreading tumbel of four to six rays, set with numerous involucra of flower-leaves, which vary in their form from a kidney to a heart-shape, and accompany small solitary flowers with orange-coloured crenated petals. The herb is rendered conspicuous by its very glaucous colour, and its numerous imbricated leaves, convex above, and concave on their under side, which last is the only part visible when they grow. Insects seem to be warned no doubt by the light spots on the under side of their leaves, though in most that part will not bear its influence.

This species flowers in August and September.


G.R. III.

J.ᵐ Sowerby del. et fec.t 1794

PICRIS hieracioides.

Hawkweed Ox-tongue.

SYNGENESIA Polygamia æqualis.

GEN. CHAR. *Receptacle* naked. *Cal.* double. *Down* more or leſs feathery. *Seeds* rugged.

SPEC. CHAR. Calyx lax. Leaves moſtly undivided. Flower ſtalks furniſhed with ſcales up to the calyx.

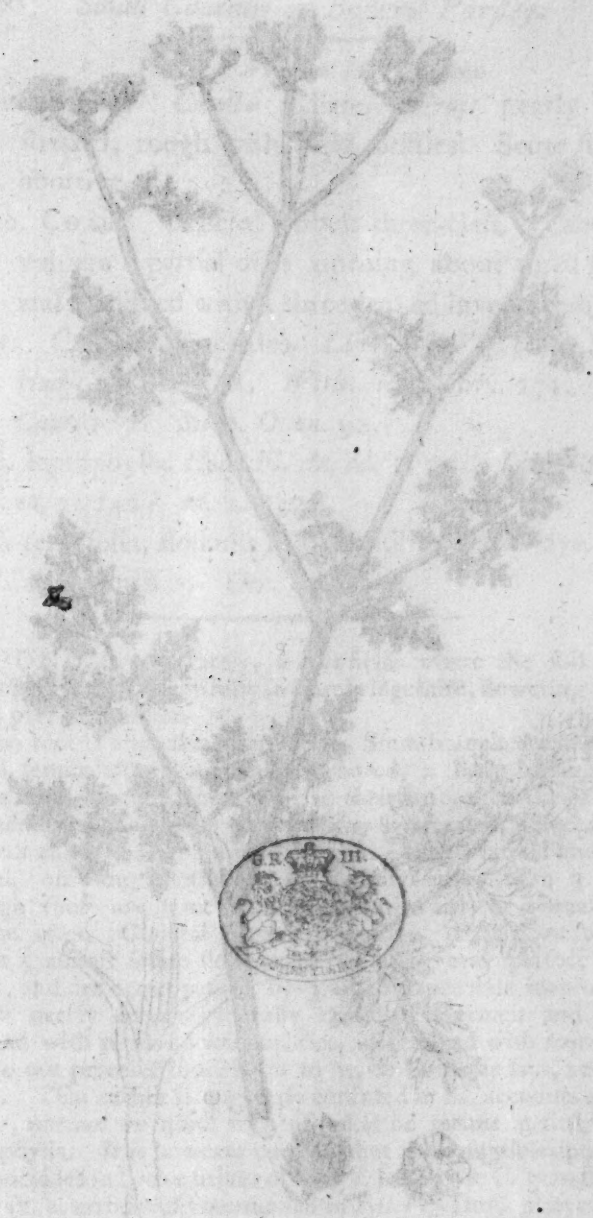
SYN. Picris hieracioides. *Linn. Sp. Pl.* 1115. *With. Bot. Arr.* 830. *Relh. Cant.* 297.

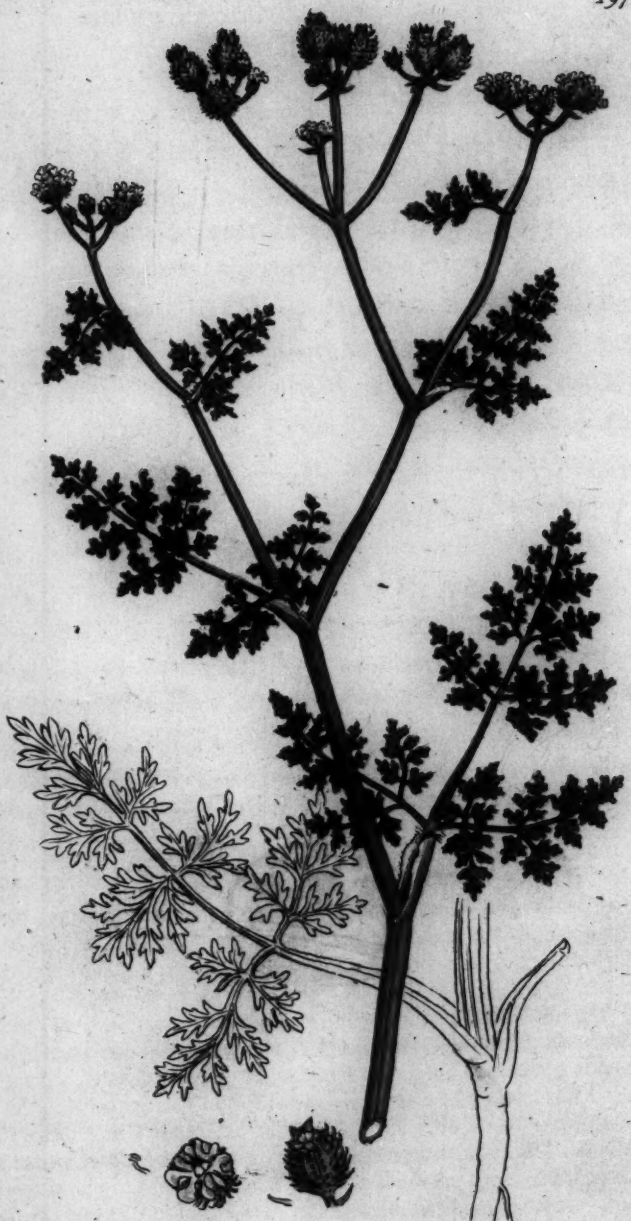
Hedypnois hieracioides. *Hudſ. Fl. An.* 342.

Hieracium aſperum majori flore in agrorum limitibus. *Raii Syn.* 167.

THIS occurs abundantly about the borders of fields in a gravelly or calcareous ſoil, flowering in July and Auguſt. It is a plant of rude growth and not very attractive appearance. The root, we believe, is perennial, or at leaſt biennial; ſtem much branched, three feet high; the branches furrowed, purple on their upper ſide and in their axillæ, as Linnæus moſt truly obſerves. Leaves oblong, ſeſſile, undivided, except that the radical ones are frequently groſsly dentated. The herb is rough with hooked briſtles. Flowers bright yellow, the lateral ones riſing on elongated branches above that which terminates the central ſtem. Calyx-leaves all rough on the back. Seed-down ſlightly feathery, ſeſſile.

Dr. Stokes's remark in the Botanical Arrangement (p. 855, note), that the Hedypnois of Hudſon is an artificial genus, is perfectly juſt. Its ſpecies are no way naturally allied, and the down, being ſeſſile or ſtipitate, affords no certain permanent character in this tribe.


G R III.



J.ᵉ Sowerby del.ᵗ Aug.ˢ 1796.

CAUCALIS daucoides.

Small Caucalis or Baſtard Parſley.

PENTANDRIA Digynia.

GEN. CHAR. *Corollæ* radiate. *Fruit* nearly oval, ſtriated, rough with rigid briſtles. Some flowers abortive.

SPEC. CHAR. General umbels three-cleft, without involucra: partial ones ripening about three ſeeds, and furniſhed with a three-leaved involucrum.

SYN. Caucalis daucoides. *Linn. Syſt. Veg. ed.* 14. 276. *Hudſ. Fl. An.* 112. *With. Bot. Arr.* 271. *Relh. Cant.* 109. *Sibth. Oxon.* 92.

C. leptophylla. *Hudſ. Fl. An. ed.* 1. 99. *Linn. Sp. Pl. ed.* 1. 242? *ed.* 2. 347.

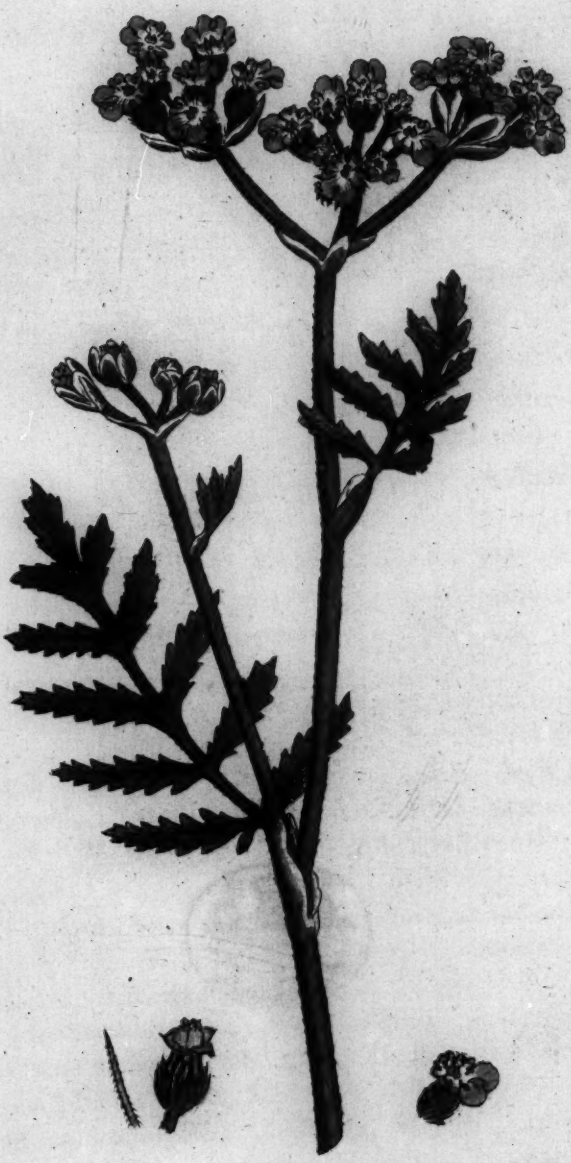
C. tenuifolia, floſculis ſubrubentibus. *Raii Syn.* 219.

C. albis floribus. *Ger. em.* 1021.

FOUND, though rarely, in cornfields where the ſoil is dry and chalky, moſt plentifully in Cambridgeſhire, flowering in the early part of ſummer.

The root is annual and tapering. Stem branched and divaricated, ſomewhat zigzag, deeply grooved, a little hairy at the joints only. Leaves three-cleft at their baſe, then thrice compounded, their ſegments very narrow, divaricated, pointed, decurrent and ſmooth, of a pale green. Umbels lateral and terminal, on long footſtalks, of ſcarcely more than 3 rays, though thoſe are ſometimes accompanied by 1 or 2 weak and barren ones. General involucrum none. Partial umbels of about 5 almoſt ſeſſile flowers, of which 3 only perfect their ſeeds, and are accompanied by 3 ſmall lanceolate involucella. Petals nearly equal, generally reddiſh. Germen and ſeeds clothed with rigid hooked briſtles, intermixed with hairs, but we do not perceive thoſe hairs to be, as Linnæus ſays, verticillated. That author is ſingularly confuſed in his accounts of this genus, nor are we quite ſure of what he meant at firſt by C. leptophylla. It is however certain, that the long deſcription of C. daucoides in both editions of *Sp. Pl.* belongs to C. grandiflora, and not (as erroneouſly mentioned in *Syſt. Veg.*) to C. platycarpos, whatever Linnæus might at any time intend by the latter.

G.R. III.



J.C. Sowerby del.t Aug.t 1794

CAUCALIS latifolia.

Broad-leaved Caucalis.

PENTANDRIA Digynia.

GEN. CHAR. *Corollæ* radiate. *Fruit* nearly oval, ſtriated, rough with rigid briſtles. Some flowers abortive.

SPEC. CHAR. General umbels three-cleft, with membranous involucra: partial ones ripening about 5 ſeeds. Leaves pinnated, ſerrated.

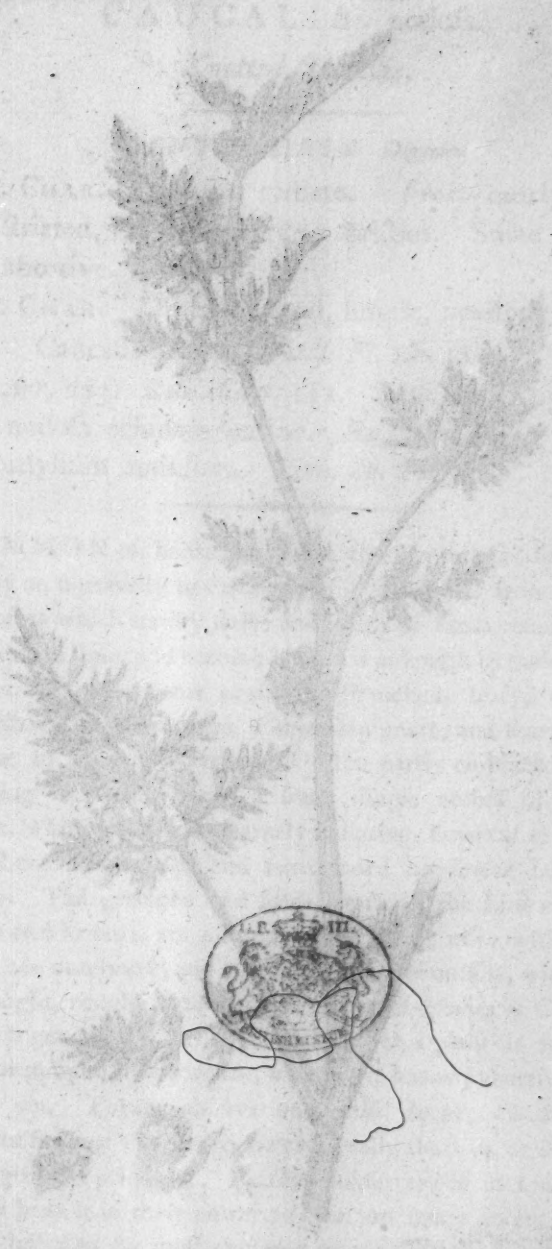
SYN. Caucalis latifolia. *Linn. Syſt. Veg. ed.* 14. 276. *Hudſ. Fl. An.* 113. *With. Bot. Arr.* 271. *Relh. Cant.* 110.

C. arvenſis echinata latifolia. *Raii Syn.* 219.

Tordylium latifolium. *Linn. Sp. Pl.* 345. *Hudſ. Fl. An. ed.* 1. 98.

THIS is rather leſs frequent than the laſt, but thrives in the ſame kind of ſoils and ſituations. It is one of the moſt beautiful of umbelliferous plants, and makes a conſpicuous appearance in the dry fields of Cambridgeſhire in July.

Root annual. Stem taller and leſs ſpreading than in C. daucoides, but as deeply furrowed, and more rough. Leaves rather glaucous, rough, ſimply pinnated, ſerrated; the lower pair of leaflets ſometimes compound at the baſe. Umbels of rarely more than 3 rays, with a general involucrum of 3 or 4 ſhort ovate leaves, ribbed in the middle, with a membranous border. Partial umbels of ſeveral nearly ſeſſile flowers, of which about 5 come to perfection. Partial involucra like the general ones. Flowers red, a little radiate. Seeds very rough with reddiſh upright ſtraight rough briſtles.



J. Sowerby del. Apr. 1 1794.

CAUCALIS nodoſa.

Knotted Caucalis.

PENTANDRIA Digynia.

GEN. CHAR. *Corollæ* radiate. *Fruit* nearly oval, ſtriated, rough with rigid briſtles. Some flowers abortive.

SPEC. CHAR. Umbels lateral, ſimple, nearly ſeſſile.

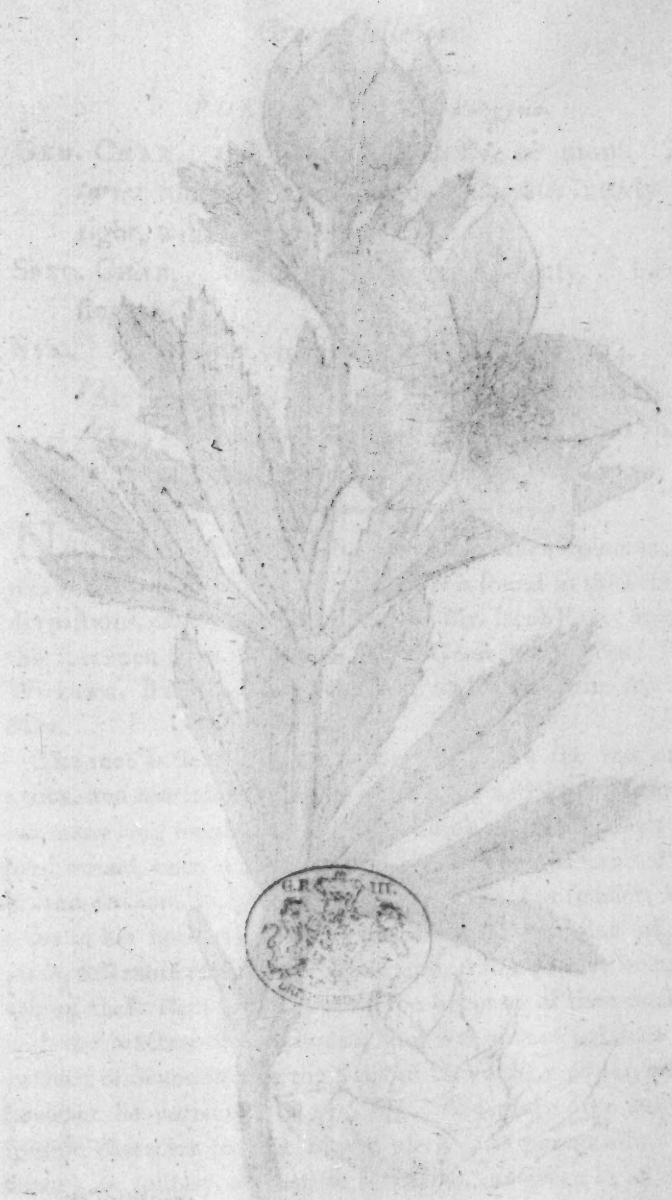
SYN. Caucalis nodoſa. *Hudſ. Fl. An.* 114. *With. Bot. Arr.* 273. *Relh. Cant.* 111. *Sibth. Oxon.* 93.

C. nodoſa echinato ſemine. *Raii Syn.* 220.

Tordylium nodoſum. *Linn. Sp. Pl.* 346.

COMMON on banks and about the borders of fields, eſpecially on a gravelly or calcareous ſoil, flowering from May to July, after which its dry ſtalks and heads of ſeeds remain for a conſiderable time, and become bleached at length by the weather.

Root annual. Stems proſtrate, branched, leafy, ſtriated, roughiſh with reflexed hairs. Leaves bipinnate, and ſharply cut; oppoſite to each of which, and often partly embraced by its ſheathing footſtalk, ſtands a ſmall ſimple umbel of ſeveral minute, white or reddiſh, ſcarcely radiating, flowers, each on a very ſhort flowerſtalk, and ſurrounded by linear hairy involucra. The germens and ſeeds, both in the Linnæan ſpecimens and in ours, are all rough, the inner ones with warty points, the outermoſt, and eſpecially on their outſide, with longiſh, ſtraight, rough, rigid hairs, as in other ſpecies of Caucalis, to which genus (and not to Tordylium) this plant is ſurely to be referred upon that account, whether it has any abortive flowers or not. Future obſervations muſt decide whether the ſmoother ſeeds of the centre are ever really abortive, or deſtitute of a vegetative principle. Practical obſervers of nature in the country have it in their power to clear up many points of this kind, relative to the moſt common plants, which, if communicated from time to time to thoſe who have the means of making them public, would materially advance the intereſts of ſcience.



T. Sandby del. & sc. 1794.

HELLEBORUS viridis.

Green Hellebore.

POLYANDRIA Polygynia.

GEN. CHAR. *Cal.* none. *Petals* five or more. *Nectaries* tubular, two-lipped. *Capſules* nearly upright, with many ſeeds.

SPEC. CHAR. Stem many-flowered, leafy. Leaves fingered.

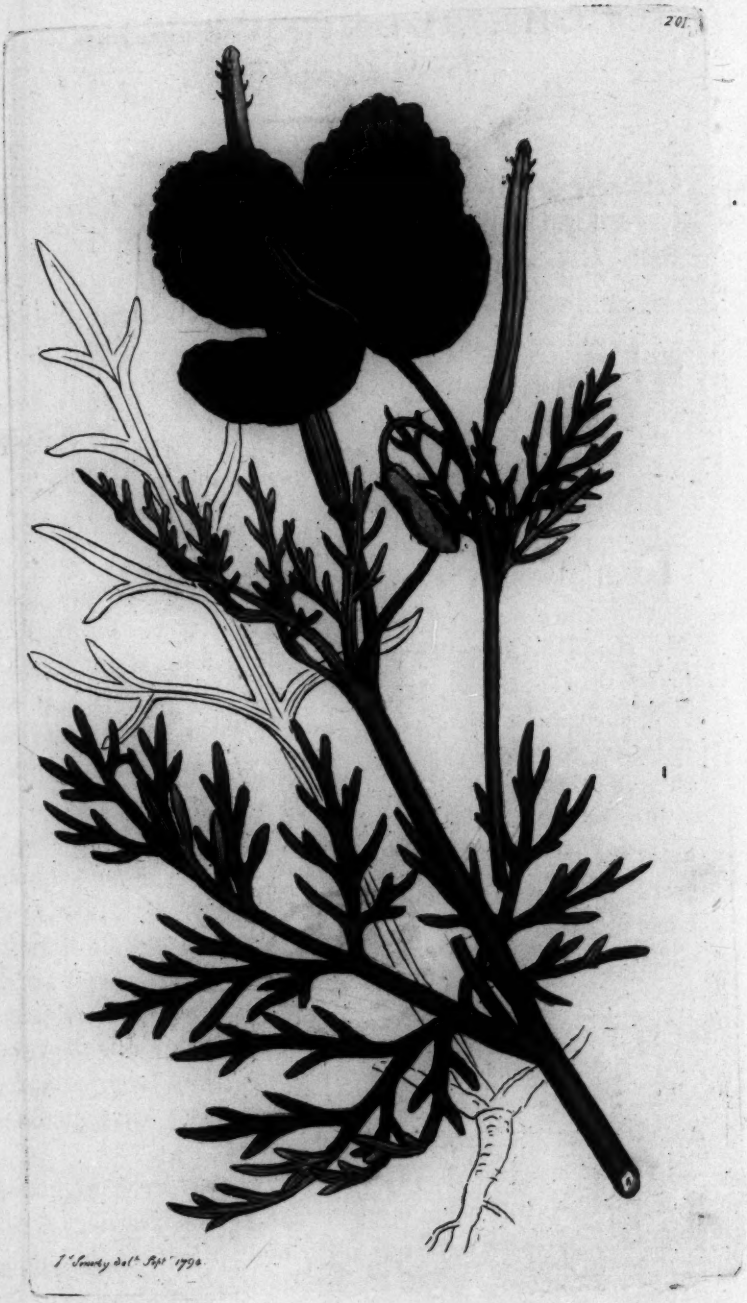
SYN. Helleborus viridis. *Linn. Sp. Pl.* 784. *Syſt. Veg. ed.* 14. 519. *Hudſ. Fl. An.* 245. *With. Bot. Arr.* 581. *Relh. Cant.* 217. *Sibth. Oxon.* 176.

H. niger hortenſis, flore viridi. *Raii Syn.* 271.

NEITHER of our Hellebores can be called common, but this is the more ſcarce of the two. It is found in thickets and dry paſtures, chiefly in chalk countries. Mr. Jacob Rayer brought this ſpecimen from the woods about Great Marlow and High Wickham, Bucks. It is perennial, and flowers in April or May.

The root is fleſhy, acrid and purgative like the reſt of its genus, and not inferior to any of them in activity. It throws out many long ſimple fibres, and produces a ſtem ſcarcely a foot high, round, once or twice divided, with a fingered ſerrated leaf at each diviſion, in form like the radical ones, but ſmaller. Linnæus in his not very accurate manuſcript deſcription of this plant, ſtill more confuſed in *Mant.* 408, ſeems to have intended calling theſe ſtem-leaves *bracteæ*, on account of their analogy with the bracteæ of H. fœtidus, and was thence led into the paradox of denominating the ſtem of H. viridis a *ſcapus*, which however he corrected in *Syſt. Veg.* We prefer the original ſpecific character to that in the place laſt mentioned. The flowers are ſolitary, on ſhortiſh footſtalks, and green in all their parts. Petals ſpreading, permanent. Styles 3 or 4, ſcarcely more, about as long as the corolla. The whole herb is ſmooth, and of a bright ſhining green.

G.R. III.



J. Sowerby del.t Sept.r 1790.

CHELIDONIUM hybridum.

Violet Horned-Poppy.

POLYANDRIA Monogynia.

GEN. CHAR. *Cal.* two-leaved. *Petals* four. *Pod* linear, of one cell.

SPEC. CHAR. Flower-ſtalks ſingle-flowered. Leaves pinnatifid, with linear ſegments. Stem ſmooth. Pods with three valves.

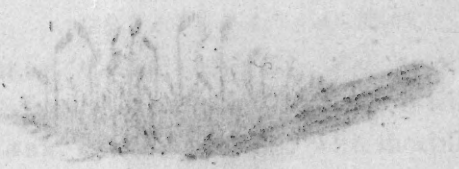
SYN. Chelidonium hybridum. *Linn. Sp. Pl.* 724. *Hudſ. Fl. An.* 229. *With. Bot. Arr.* 549. *Relh. Cant.* 201.

Papaver corniculatum violaceum. *Raii Syn.* 309.

THE corn-fields of Cambridgeſhire afford this rare plant, from whence we have juſt received it by favour of the Rev. Mr. Hemſted, flowering in the middle of May, a much earlier ſeaſon than is attributed to this ſpecies by Mr. Hudſon. It was once obſerved in a field 4 miles from Aylſham, in the road from Norwich to Cromer, but is, we believe, unknown in other parts of Britain.

The ſmall annual root produces one upright, round, much-branched ſtem, clothed with alternate leaves of a dark ſhining green, often triply pinnatifid, with linear ſegments. The calyx falls off before the flowers are well expanded, and the delicate violet-coloured petals laſt but a very few hours. The ſtamina are capillary, and not very numerous. Germen linear, triangular, with a furrow along each ſide, briſtly towards the ſummit, and terminated by three ſtigmas. Pod long, of three valves, producing many ſeeds. A few hairs are ſometimes ſcattered over the ſtem and calyx.

Linnæus imagines the plant before us may have originated from Papaver Argemone impregnated by ſome ſpecies of Chelidonium; but we ſee ſcarcely any reaſon for ſuch a ſuppoſition, nor can we conceive which Chelidonium he had in view.



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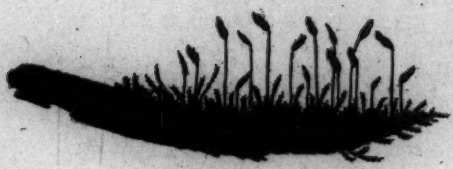
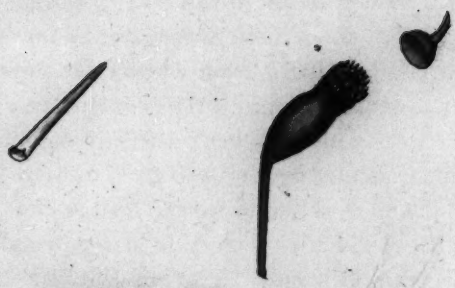




J. Sowerby del. et sculp. 1794.

HYPNUM intricatum.

Matted Hypnum.

CRYPTOGAMIA Muſci.

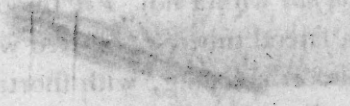
GEN. CHAR. *Capſule* with a lid. *Veil* ſmooth. *Flower-ſtalk* from a lateral tubercle invelted with ſcales.

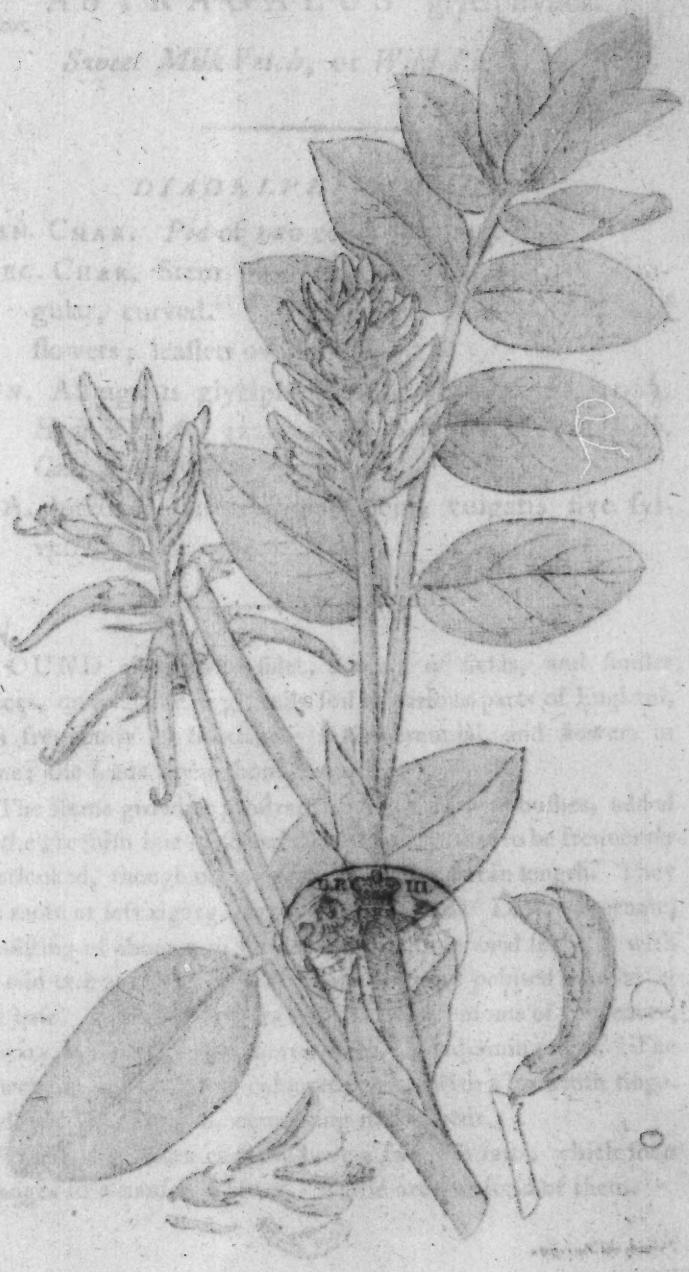
SPEC. CHAR. Shoots creeping, with ſhortiſh branches. Leaves ſpreading, lanceolate, taper-pointed. Capſules urn-ſhaped, inclining, with a recurved beak.

SYN. Hypnum intricatum. *Schreb. Fl. Lipſ.* 99. *Dickſ. Crypt. faſc.* 2. 10. *With. Bot. Arr. v.* 3. 120.

THIS moſs was firſt diſcovered in England by Mr. Robert Teeſdale, F.L.S. in ſome woods on the ſouth-eaſt ſide of the river at Matlock-bath, from whence Dr. Smith ſent it to Mr. Dickſon, and from his original ſpecimens our figure was drawn. It well agrees with Schreber's deſcription, and with the figures of Vaillant quoted by him (*tab.* 28. *f.* 2, 6, 7, 8).

The ſhoots thickly interwoven form a cloſe dark-green mat on the decayed bark of trees in damp woods, and extend to ſeveral inches in length. The branches are ſhort and ſlender, clothed with alternate, lanceolate, ſharp-pointed, entire leaves, thoſe at the ſummit being paleſt; and, as Schreber remarks, the leaves are moſt lax and ſpreading in a dried ſtate. Numerous reddiſh ſtalks, ſcarcely an inch high, each ariſing from an oval bulb at the ſide of the ſtem, bear ſmall, ſhort, inclining, urn-ſhaped capſules, red at the margin, and fringed with numerous teeth. Their lid is ſhort, ſwelling, and terminated by a ſhortiſh recurved beak. Veil ſlender, cylindrical, whitiſh, but not ſo remarkably white and conſpicuous as in H. ſerpens, which this ſpecies otherwiſe much reſembles in habit, though not in the form of its capſules.





J. Sowerby del. Sept. 1794.

ASTRAGALUS glyciphyllos.

Sweet Milk-Vetch, or *Wild Liquorice.*

DIADELPHIA Decandria.

GEN. CHAR. *Pod* of two cells, ſwelling.

SPEC. CHAR. Stem proſtrate. Pods ſomewhat triangular, curved. Leaves longer than the ſpikes of flowers; leaflets oval.

SYN. Aſtragalus glyciphyllos. *Linn. Sp. Pl.* 1067. *Hudſ. Fl. An.* 322. *With. Bot. Arr.* 787. *Relh. Cant.* 277. *Sibth. Oxon.* 227.

A. luteus perennis procumbens, vulgaris ſive ſylveſtris. *Raii Syn.* 326.

FOUND about way ſides, borders of fields, and ſimilar places, on a chalky or gravelly ſoil in various parts of England, leſs frequently in Scotland. It is perennial, and flowers in June; the ſeeds ripen about Auguſt.

The ſtems growing proſtrate among graſs and buſhes, added to the greeniſh hue of the whole plant, cauſe it to be frequently overlooked, though often extending 2 or 3 feet in length. They are more or leſs zigzag, angular and ſtriated. Leaves alternate, conſiſting of about 5 to 7 pair of roundiſh or oval leaflets, with an odd one at the end, and a pair of ovate pointed ſtipulæ at the baſe. Spikes of flowers ariſe from the boſoms of the leaves, ſolitary, on foot-ſtalks, ſhorter than the adjoining leaf. The flowers are pale ſulphur-coloured, often with a browniſh tinge. Pods reddiſh, inflated, containing many ſeeds.

The leaves when chewed have a ſweetiſh taſte, which ſoon changes to a nauſeous bitter. Cattle are not fond of them.

... Jul 5 11 - 1 . 794

SIUM latifolium.

Broad-leaved Water Parſnep.

PENTANDRIA Digynia.

GEN. CHAR. *Fruit* nearly oval, compreſſed, ſtriated. *Involucrum* general and partial, of many leaves. *Petals* heart-ſhaped, uniform.

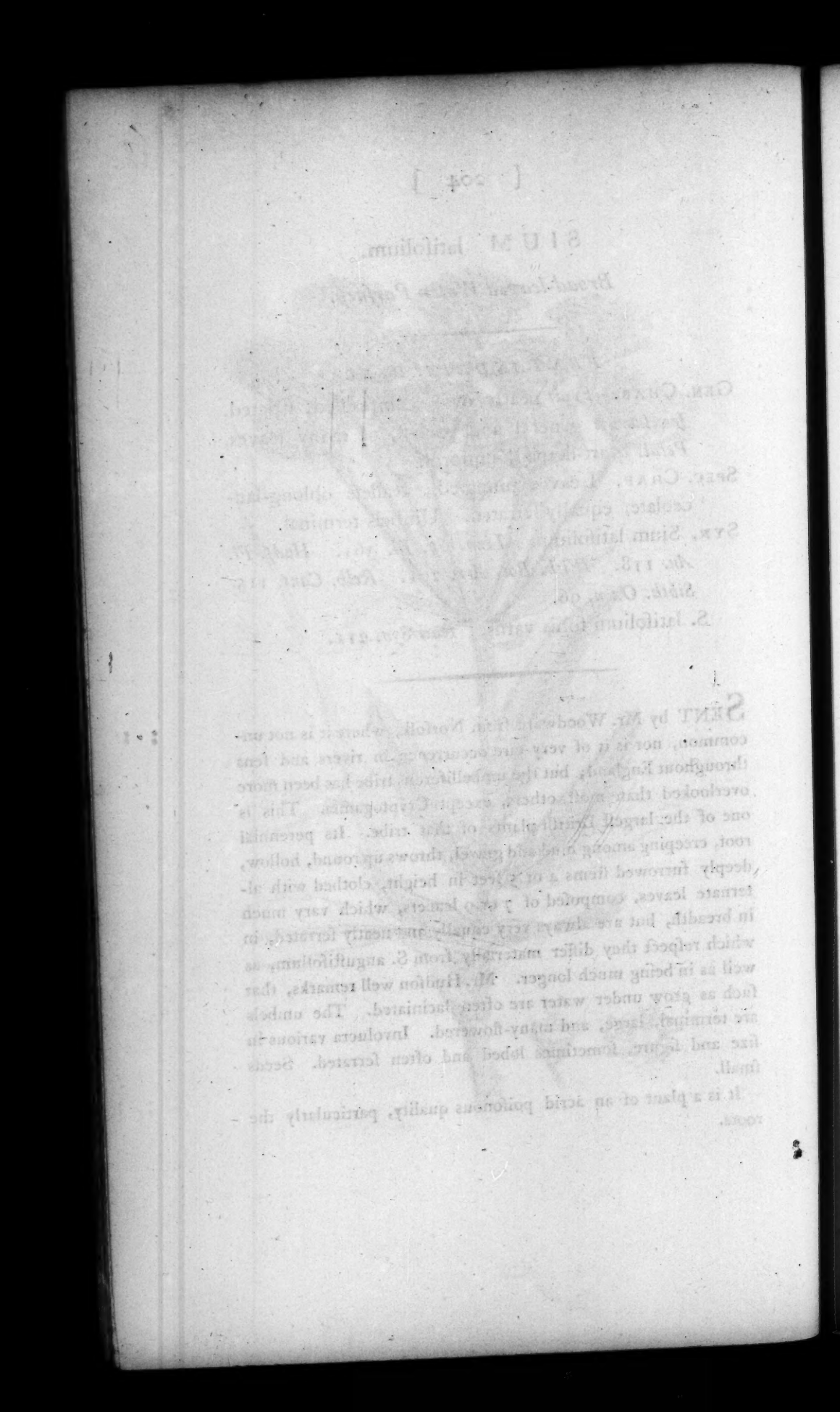
SPEC. CHAR. Leaves pinnated; leaflets oblong-lanceolate, equally ſerrated. Umbels terminal.

SYN. Sium latifolium. *Linn. Sp. Pl.* 361. *Hudſ. Fl. An.* 118. *With. Bot. Arr.* 291. *Relh. Cant.* 115. *Sibth. Oxon.* 96.

S. latifolium foliis variis. *Raii Syn.* 211.

SENT by Mr. Woodward from Norfolk, where it is not uncommon, nor is it of very rare occurrence in rivers and fens throughout England; but the umbelliferous tribe has been more overlooked than moſt others, except Cryptogamia. This is one of the largeſt Britiſh plants of that tribe. Its perennial root, creeping among mud and gravel, throws up round, hollow, deeply furrowed ſtems 4 or 5 feet in height, clothed with alternate leaves, compoſed of 7 or 9 leaflets, which vary much in breadth, but are always very equally and neatly ſerrated, in which reſpect they differ materially from S. anguſtifolium, as well as in being much longer. Mr. Hudſon well remarks, that ſuch as grow under water are often laciniated. The umbels are terminal, large, and many-flowered. Involucra various in ſize and figure, ſometimes lobed and often ſerrated. Seeds ſmall.

It is a plant of an acrid poiſonous quality, particularly the roots.



FRANKENIA LAE.

Smooth Sea Heath.

F. Sansom, del.t Oct.r 1794.

FRANKENIA lævis.

Smooth Sea-Heath.

HEXANDRIA Monogynia.

GEN. CHAR. *Cal.* 5-cleft, funnel-ſhaped. *Petals* 5. *Stigmas* 3. *Capſ.* of one cell, with 3 valves.

SPEC. CHAR. Leaves linear, cluſtered, ciliated at the baſe.

SYN. Frankenia lævis. *Linn. Sp. Pl.* 473. *Hudſ. Fl. An.* 137. *With. Bot. Arr.* 367. *Relh. Cant.* 135. Lychnis ſupina maritima Ericæ facie. *Raii Syn.* 338.

A NATIVE of muddy ſalt marſhes, more eſpecially on our eaſtern coaſts. Mr. Lilly Wigg ſent it from Yarmouth. It is perennial, and flowers after midſummer.

Root woody. Stems procumbent, round, branched. Leaves in little cluſters, ſmall, ſucculent, linear, or rather lanceolate and revolute, dilated at the baſe into a pair of minute, membranous, ciliated ſtipulæ. Flowers moſtly at the divarications of the branches, rarely terminal, ſolitary, ſeſſile, delicate and elegant in form and colour, like thoſe of a little red pink or campion. Calyx with 5 (rarely more) teeth, angular. Nectary a yellow ſcale attached to the claw of each petal. Stamina and Piſtillum much reſembling thoſe of the Lychnis tribe, to which the plant before us is nearly allied, though ſo different from moſt of them in habit.

This genus was firſt determined by Micheli, who named it *Franca* after his friend Franchi, a Florentine phyſician and botaniſt, born at Lucca, who had a principal hand in founding the Botanical Society of Florence. It ſhould ſeem that Linnæus did not think this gentleman's claims to ſuch an honour ſufficient, and therefore changed the name to *Frankenia*, to perpetuate the memory of Frankenius, profeſſor at Upſal in the middle of laſt century, author of a not very uſeful catalogue of plants called *Speculum botanicum*, of which there are 2 editions, both at preſent very rare.

HERNIARIA glabra.

Smooth Rupture-Wort.

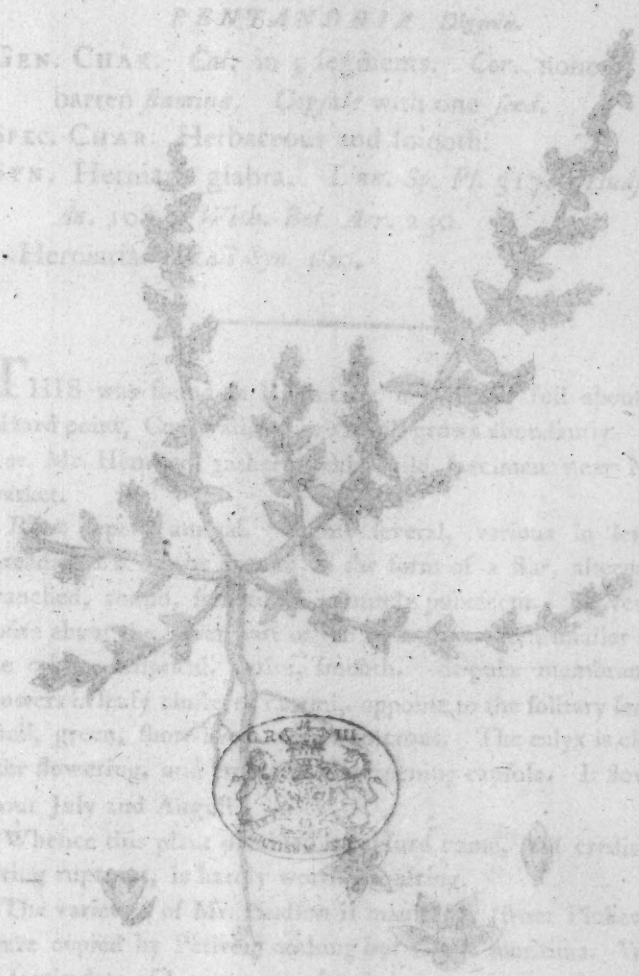
PENTANDRIA *Digynia.*

GEN. CHAR. *Cal.* 5-*leaved.* *Cor.* none. *Fruit* 5-barred *leaving*. *Capsule* with one *seed*.

SPEC. CHAR. Herbaceous and smooth.

SYN. Herniaria glabra. *Linn. Sp. Pl.* [illegible] *Fl. Brit.* [illegible] *Fl. Dan.* [illegible]

Herniaria [illegible] *Fl. Dan.* [illegible]

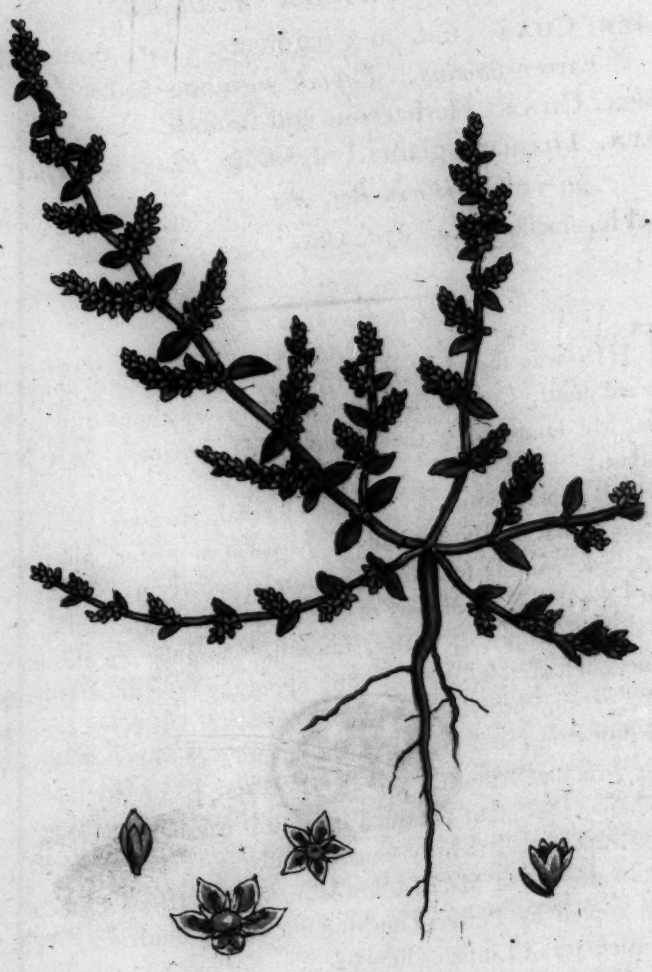


THIS [illegible] about the Lizard point, [illegible] The Rev. Mr. Hudson [illegible] common there. New. author.

[illegible] filiform, various in length, [illegible] the form of a star, alternately branched, [illegible] it. [illegible] opposite membranous, [illegible] flowers [illegible] opposite to the solitary leaves, small, green, [illegible] The calyx is closed after flowering, [illegible] corolla. It flowers about July and August.

Whence this plant [illegible] credit for native, [illegible] is hardly worth [illegible]

The variety of Mr. Hudson [illegible] Prodromus is quite distinct by [illegible] Lamarck. What is lenticulata of Lamarck may be, it is not easy [illegible] determine, but there is much reason to suppose it Cassia procumbens.



HERNIARIA glabra.

Smooth Rupture-Wort.

PENTANDRIA Digynia.

GEN. CHAR. *Cal.* in 5 ſegments. *Cor.* none. Five barren *ſtamina*. *Capſule* with one *ſeed*.

SPEC. CHAR. Herbaceous and ſmooth.

SYN. Herniaria glabra. *Linn. Sp. Pl.* 317. *Hudſ. Fl. An.* 108. *With. Bot. Arr.* 250.

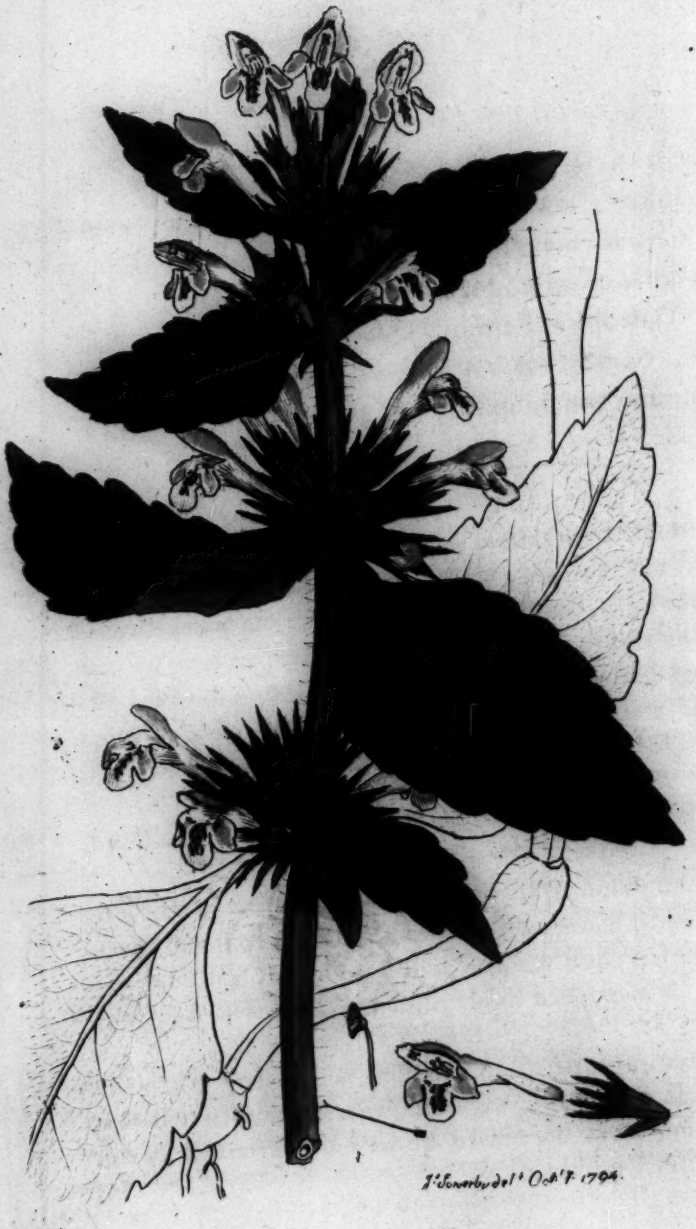
Herniaria. *Raii Syn.* 160.

THIS was found in Ray's time in gravelly ſoil about the Lizard point, Cornwall, where it ſtill grows abundantly. The Rev. Mr. Hemſted gathered this wild ſpecimen near Newmarket.

Root taper, annual. Stems ſeveral, various in length, ſpreading flat on the ground in the form of a ſtar, alternately branched, round, ſometimes minutely pubeſcent. Leaves oppoſite about the lower part of the ſtem, one often ſmaller than the other, elliptical, entire, ſmooth. Stipulæ membranous. Flowers in leafy cluſtered racemi, oppoſite to the ſolitary leaves, ſmall, green, ſhort-lived, very numerous. The calyx is cloſed after flowering, and embraces the ripening capſule. It flowers about July and Auguſt.

Whence this plant obtained its abſurd name, and credit for curing ruptures, is hardly worth enquiring.

The variety β of Mr. Hudſon is manifeſtly (from Plukenet's figure copied by Petiver) nothing but Glaux maritima. What H. lenticulata of Linnæus may be, it is not our purpoſe now to determine, but there is much reaſon to ſuppoſe it Creſſa cretica.


J. Sowerby del. Oct.r 1. 1794.

GALEOPSIS Tetrahit.

Red Hemp-Nettle.

DIDYNAMIA Gymnoſpermia.

GEN. CHAR. Upper lip of the *corolla* ſlightly notched, vaulted; lower lip with two teeth on its upper ſide.

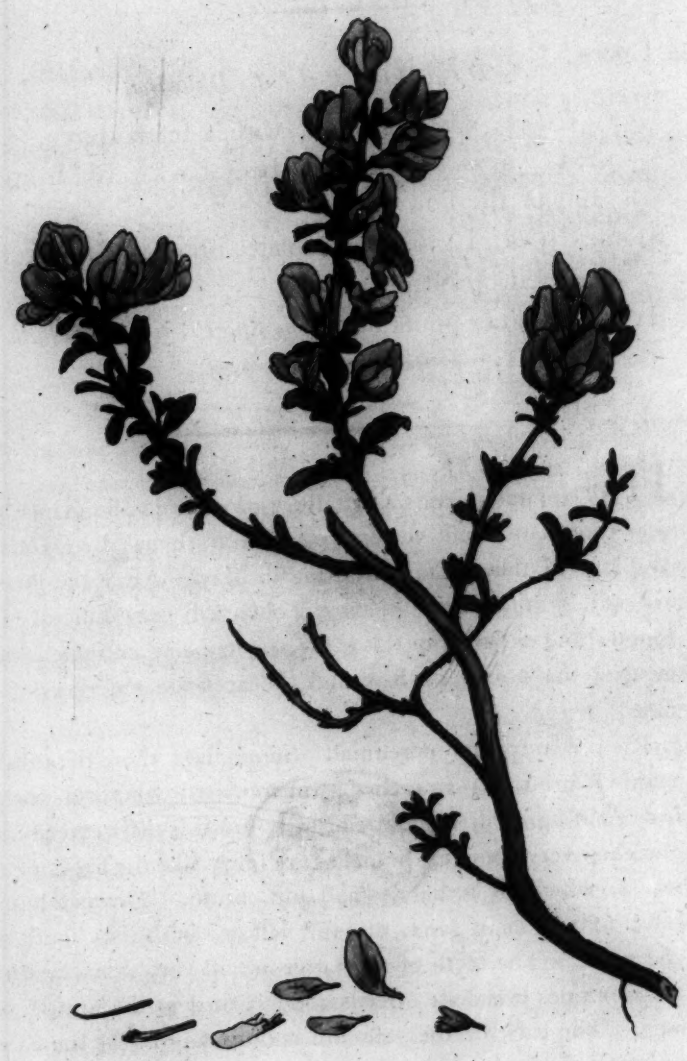
SPEC. CHAR. Stem ſwelled below the joints. Upper whorls crowded together. Calyx pungent.

SYN. Galeopſis Tetrahit. *Linn. Sp. Pl.* 810. *Hudſ. Fl. An.* 257. *With. Bot. Arr.* 608. *Relh. Cant.* 228. Lamium cannabino folio vulgare. *Raii Syn.* 240.

A TROUBLESOME weed in corn-fields, gardens, &c. on a gravelly ſoil, but being ſtrictly annual is eaſily eradicated before flowering. The ſtem is quadrangular, but much ſwelled below 2 or 3 of the lowermoſt joints. Every part is rough with very ſharp, but not venomous, prickles, and the calyx-teeth are very pungent. The herb has a ſtrong, not aromatic, odour when bruiſed. The corolla varies much in ſize and colour, from purple to white, but the baſe of the lip ſeldom loſes its elegant dark ſtreaks. The antheræ are ſingularly two-lobed, and hairy.

Dr. Smith found at Matlock in 1788 a remarkable variety, whoſe terminal flowers were always regularly 4-cleft and ſalver-ſhaped, with 4 equal ſtamina, while all the reſt had their proper form, as mentioned in his edition of *Linn. Flo. Lapponica*, p. 201.

The beautiful variety δ of Hudſon, with a large yellowiſh flower, is ſo remarkable, we ſhall give a figure of it when it comes in our way; nor indeed are we quite certain of its not being a diſtinct ſpecies.



J. Sowerby del.t Oct.r 1.1794

GENISTA pilosa.

Hairy Green-Weed.

DIADELPHIA Decandria.

GEN. CHAR. *Cal.* 2 lipped, with 2 teeth above, 3 below. *Standard* oblong, bent backwards from the reſt of the flower.

SPEC. CHAR. Leaflets lanceolate, obtuſe. Stem tuberculated, proſtrate.

SYN. Geniſta pilosa. *Linn. Sp. Pl.* 999. *Hudſ. Fl. An.* 311. *With. Bot. Arr.* 759.

HIGH ſandy heaths about Bury produce in abundance this very rare plant, and we received it from thence by favour of William Mathew, Eſq. flowering in May. After the flowers are paſt, it is (as Mr. Woodward obſerved) very difficult to be found; and either from this cauſe, or its being extremely local, eſcaped the notice of Ray and the accurate obſervers of his day.

Root woody and perennial. Stems like thoſe of a dwarf willow, proſtrate, branched, tuberculated wherever former leaves have grown, angular and leafy towards their extremities, and their very youngeſt branches are ſilky, like the backs of the leaves, which are ternate, ſmall and obtuſe. Flowers numerous, ſolitary or in pairs, of a full yellow, with ſilky footſtalks and calyx. The teeth of the latter are all very ſhort, and the 2 upper ones broadeſt. Seeds about 3 or 4 in the unripe germen. The back of the ſtandard is often as ſilky as the calyx, and even the keel is hairy.

G.R. III.

Oct 1st 1794 Published by J. Sowerby London

OSMUNDA regalis.

Osmund royal, or Flowering Fern.

CRYPTOGAMIA Filices,—spicatæ.

GEN. CHAR. *Capsules* naked, globose, two-valved.

SPEC. CHAR. Frond bipinnate, terminating in a compound cluster of fructification.

SYN. Osmunda regalis. *Linn. Sp. Pl.* 1521. *Hudſ. Fl. An.* 449. *With. Bot. Arr. v.* 3. 47.

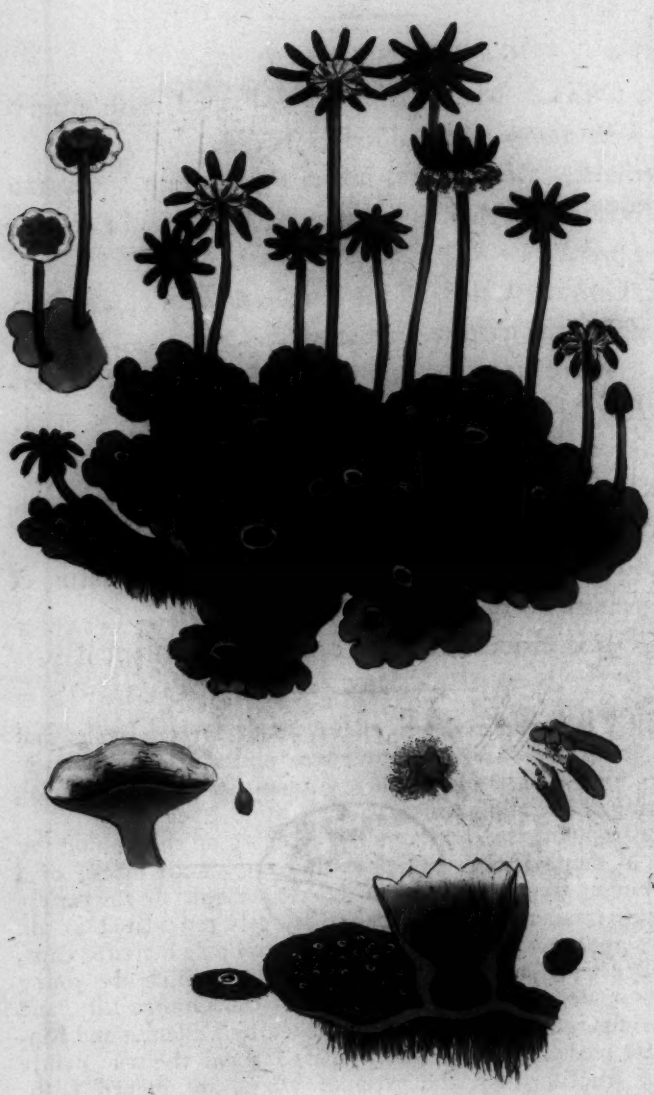
Filix ramosa non dentata florida. *Raii Syn.* 125.

OSMUNDA belongs to that tribe of ferns whose fructification, instead of being borne on the back of the frond, is produced by a metamorphosis, as it were, of the leaf itself; neither are the capsules bound with a ring, as in most of the dorsiferous ferns. See an excellent note of Dr. Stokes's *Bot. Arr. v.* 3. 46. and Dr. Smith's paper *de filicum generibus dorsiferarum*, in the 5th vol. of the Memoirs of the Turin Acad. p. 147.

The species before us occurs here and there in watery shady meadows and spongy bogs, making a conspicuous figure with its clusters of fructification in July or August. Its root is large and woody, a decoction or extract of which is esteemed in Switzerland very useful for curing the rickets. Fronds several, 3 or 4 feet high, not unlike in hue and figure to young ash trees, as Gerarde observes; they are bipinnate, the leaflets alternate or opposite occasionally, finely serrated, and often slightly lobed at the base. The clusters are thrice compounded, bearing roundish tufts of innumerable bivalve capsules, full of minute seeds. A magnified figure of the capsule has, by accident, been omitted in our plate, but we shall take a future opportunity of exhibiting the generic character.

Ray, in the 1st edition of his Synopsis, p. 26, has described and figured young plants of this species as a new fern, by the name of *Hemionitis pumila trifolia vel quinquefolia maritima.*

GEORGIUS III.
REX



Dec.1st 1794 Published by T. Cadell, Strand.

MARCHANTIA polymorpha.

Star-headed Marchantia.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male. *Calyx* ſalver-ſhaped, with numerous *antheræ* imbedded in its diſk.

Female. *Cal.* peltate, flowering beneath. *Capſules* burſting at their ſummit. *Seeds* attached to elaſtic fibres.

SPEC. CHAR. Calyx of the female flowers cloven into about ten narrow ſegments.

SYN. Marchantia polymorpha. *Linn. Sp. Pl.* 1603. *Hudſ. Fl. An.* 519. *With. Bot. Arr. v.* 3. 158. *Sibth. Oxon.* 313. *Relh. Cant.* 420.

Lichen petræus latifolius, ſive Hepatica fontana. *Raii Syn.* 115.

L. fontanus major, ſtellatus æquè, ac umbellatus, et cyathophorus. *Dill. Muſc.* 523. *t.* 76. *f.* 6.

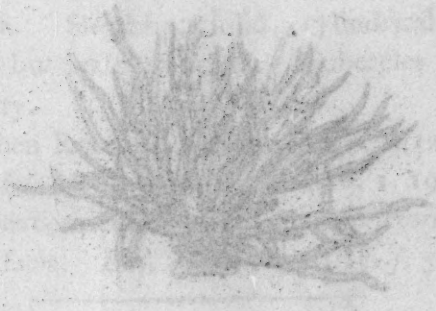
β L. domeſticus minor, &c. *Ibid.* 527. *t.* 77. *f.* 7.

VERY common in damp places, about ſprings, wells, and ſhady moiſt court-yards. Gardeners find it troubleſome in over-running the mould of their garden-pots. It is perennial, flowering about midſummer.

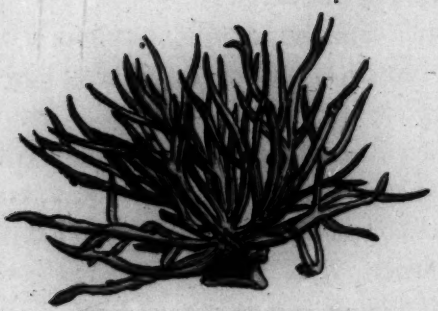
The fronds ſpread horizontally, creeping on the ground by means of denſe fibrous radicles; they are bluntly lobed, of a dark ſhining green, and more or leſs reticulated. In the variety β they are ſmaller, more opake, and ſcarcely reticulated at all. Their upper ſurface is ſtudded with ſeveral pale dentated cups, half-filled with little green lenticular bodies, which are young plants, analogous to the ſtem-bulbs of the Orange Lily, and other viviparous plants, though miſtaken by Dillenius and Linnæus for ſeeds. Hedwig has firſt aſcertained the true nature of the fructification, the parts of which are indeed faithfully delineated by Dillenius, but he did not underſtand their œconomy. We have followed Hedwig's opinion, confirmed by obſervation, in the character given above. The hairs with which the ſeeds are connected appear from their elaſticity to have a kind of ſpontaneous motion, and are well worth notice.

MARCHANTIA. polymorpha.

Star-headed Marchantia.



G.R. III



LICHEN Roccella.

Dyer's Lichen, or Orchall.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, ſcattered warts.

Female, ſmooth ſhields or tubercles, in which the ſeeds are imbedded.

SPEC. CHAR. Shrubby, ſolid, cylindrical, without leaves, but little branched. Tubercles alternate, powdery.

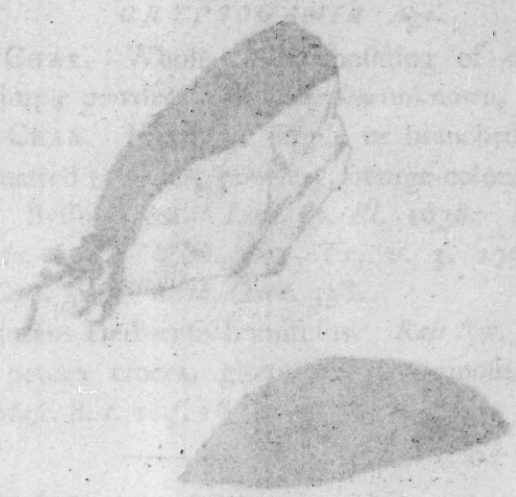
SYN. Lichen Roccella. *Linn. Sp. Pl.* 1622. *Dickſ. Crypt. faſc.* 3. 19. *Smith's Tour, v.* 1. 198.

Coralloides corniculatum faſciculare tinctorium, Fuci teretis facie. *Dill. Muſc.* 120. *t.* 17. *f.* 39.

MR. DICKSON has lately admitted this Lichen as a Britiſh native, on the authority of Mr. Goſſelin, who found it in Guernſey. Our ſpecimen was gathered by Lord Viſcount Lewiſham on Portland Iſland. It grows on maritime rocks, very common in the Mediterranean and the Levant. Linnæus had it too from China.

Its ſolid baſe is firmly fixed to the rocks, and produces a thick tuft of worm-like ſtems, round, acutely pointed, often curved, more or leſs branched, ſmooth, of a white, gray or browniſh hue, and ſtudded about their upper part with ſcattered tubercles, replete with white powder, which ſome have thought the ſeeds. Dillenius ſeems to think theſe tubercles may be only the ſpots where ſcutellæ have ſtood; in fact, the fructification of this ſpecies is not well known.

As an article of commerce it is of very great importance, being extremely valuable for dyeing wool or ſilk any ſhade of purple or crimſon. For this purpoſe it is ſteeped in volatile alkali, commonly diſtilled from urine. Dillenius mentions 80l. ſterling per ton as a great price for Orchall, being almoſt as much again as it coſt in the Archipelago, ſo much better a judge was he of Lichens than of the comfortable emoluments of trade! It has ſince been ſold at 100l. in times of ſcarcity.



G.R. III.

BYSSUS aurea.

Golden Byſſus.

CRYPTOGAMIA Algæ.

GEN. CHAR. Whole plant conſiſting of down or ſimple powder. *Fructification* unknown.

SPEC. CHAR. Filaments ſimple or branched, cloſely matted together, powdery, orange-coloured.

SYN. Byſſus aurea. *Linn. Sp. Pl.* 1638. *Hudſ. Fl. An.* 606. *With. Bot. Arr. v.* 3. 276. *Relh. Cant.* 446. *Sibth. Oxon.* 338.

B. aureus Derbienſis humifuſus. *Raii Syn.* 56.

B. petræa crocea, glomerulis lanuginoſis. *Dill. Muſc.* 8. *t.* 1. *f.* 16.

THIS Byſſus thrives beſt in a pure air, always in moiſt ſhad places; and although moſt abundant and luxuriant on the calcareous rocks and banks of Derbyſhire, yet it is found occaſionally on damp limeſtone buildings, and in chalk-pits in other parts of England. We procured it plentifully from a chalk-pit near Gad's-hill, Kent, in June laſt.

It often uniformly covers a ſpace of many inches in diameter, and looks like a fine piece of orange-coloured cloth or velvet; ſometimes the ſurface is more tufted, broken and irregular, and it frequently grows in a ſtraggling manner, ſcattered over moſſes. When of any conſiderable ſize, it is a very conſpicuous and beautiful object. Its fine colour is not however permanent; for although this colour does not change (as authors report) immediately upon drying, but generally laſts till 5 or 6 weeks afterwards, yet at that period, or ſometimes earlier, the whole plant becomes of a greeniſh gray, which never changes. The cruſt is often $\frac{1}{8}$ of an inch in thickneſs, and, from a curious ſpecimen in Dr. Smith's poſſeſſion, appears to grow in a concentric manner. The fibres are very fine, thick ſet, erect, moſtly branched, and ſtrongly matted together.

Nov 1 1794 Published by Phillips Lond.

PYROLA rotundifolia.

Round-leaved Winter-green.

DECANDRIA Monogynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Capſ.* 5-celled, burſting at the angles.

SPEC. CHAR. Stamina pointing upwards, ſtyle downwards.

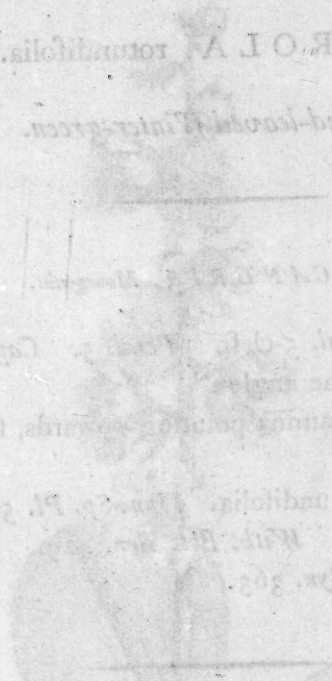
SYN. Pyrola rotundifolia. *Linn. Sp. Pl.* 567. *Hudſ. Fl. An.* 175. *With. Bot. Arr.* 429.
Pyrola. *Raii Syn.* 363.

WE have already given the figures of two rare ſpecies of this pretty genus, and under the laſt (t. 158) promiſed as ſoon as poſſible to exhibit P. rotundifolia, which we are now enabled to do by means of a ſpecimen gathered by the accurate and indefatigable Mr. Wigg, among buſhes on a common at Bradwell not far from Yarmouth, where the plant grows ſparingly, and is elſewhere, even amongi ts favourite mountains of the north, very rarely to be found. It flowers moſtly about July, and is perennial.

The root and leaves agree very much with thoſe of P. minor, except that the latter, as well as the flowers, are larger. The calyx is longer, and more lanceolate, but the eſſential difference conſiſts in the ſtamina being all bent, as if for ſhelter, towards the upper ſide of the flower, while the ſtyle (much longer than that of P. minor) is curved downwards in as ſingular a manner, and again recurved to catch the pollen. The ſtigma terminates in five blunt tubercles.

PYROLA rotundifolia.

Round-leaved Winter-green.



Pubd by J. Sowerby Lond.

DIANTHUS Caryophyllus.

Clove Pink, or Carnation.

DECANDRIA Digynia.

GEN. CHAR. *Cal.* cylindrical, of one leaf, with about 4 ſcales at the baſe. *Petals* 5, furniſhed with claws. *Capſ.* cylindrical, one-celled.

SPEC. CHAR. Flowers ſolitary. Scales of the calyx almoſt rhomboid, and very ſhort. Petals notched, beardleſs.

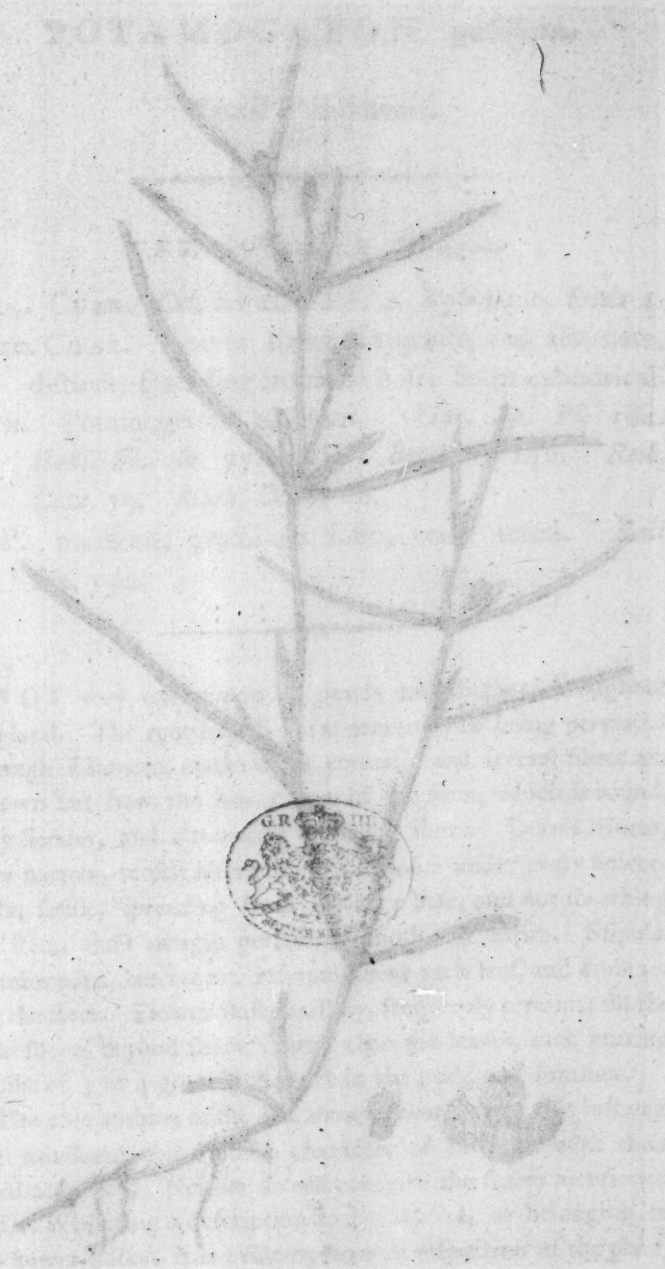
SYN. Dianthus Caryophyllus. *Linn. Sp. Pl.* 587. *Hudſ. Fl. An.* 184. *With. Bot. Arr.* 441. *Smith in Linn. Tranſ. v.* 2. 299.

Caryophyllus ſimplex flore minore pallido rubente. *Raii Syn.* 336.

GATHERED on the walls of Rocheſter caſtle in June laſt. It is plentiful on walls in that neighbourhood, and ſometimes occurs about thoſe of other old towns. Ray and Hudſon take it for an outcaſt of gardens. Indeed it varies in ſize and colour, like all plants ſo circumſtanced. Ours is ſurely the plant of Ray, and, we think, ought to be eſteemed the real original ſpecies, rather than a variety as marked by Mr. Hudſon. It agrees preciſely with the ſpecimens of Linnæus.

The root is perennial, and runs deep into the mortar, producing ſeveral tufts of channelled glaucous leaves, finely denticulated a little above the baſe, but in the upper part perfectly entire and ſmooth at the margin. The ſtem is panicled, bearing many ſolitary (not faſciculated) flowers, of a light red or fleſh-colour; their petals unequally notched, ſmooth at the orifice; calyx ſtriated, with 4 ſcales not a third of its length, the 2 outermoſt rhomboid, 2 innermoſt wedge-ſhaped, even broader than they are long, with a ſmall point, all of them ribbed. The ſtamina are ſometimes very ſhort, and perhaps in that caſe abortive, as in Arenaria dianthoides, *Smith Ic. t.* 16. The ſtyles are commonly long, recurved, and downy on the upper ſide.

What Mr. Doody meant by a "hairy ſpecies, frequent in Kent, and found likewiſe in other places," diſtinct from the above, we are at a loſs to determine.


G.R.
III

Nov.r 1.1794 Published by J.r Sowerby London

POTAMOGETON pusillum.

Small Pond-weed.

TETRANDRIA Tetragynia.

GEN. CHAR. *Cal.* none. *Petals* 4. *Style* none. *Seeds* 4.

SPEC. CHAR. Leaves linear, oppoſite and alternate, diſtinct, ſpreading from the baſe. Stem cylindrical.

SYN. Potamogeton puſillum. *Linn. Sp. Pl.* 184. *Hudſ. Fl. An.* 77. *With. Bot. Arr.* 176. *Relh. Cant.* 73. *Sibth. Oxon.* 66.

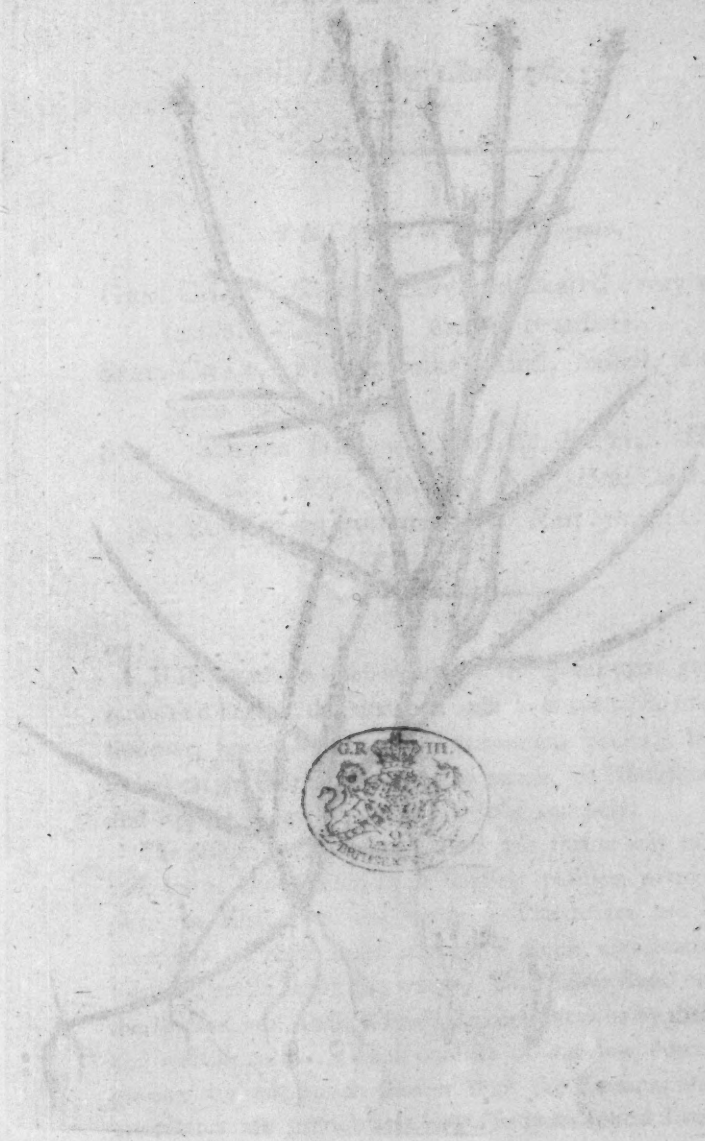
P. puſillum, gramineo folio, caule tereti. *Raii Syn.* 150.

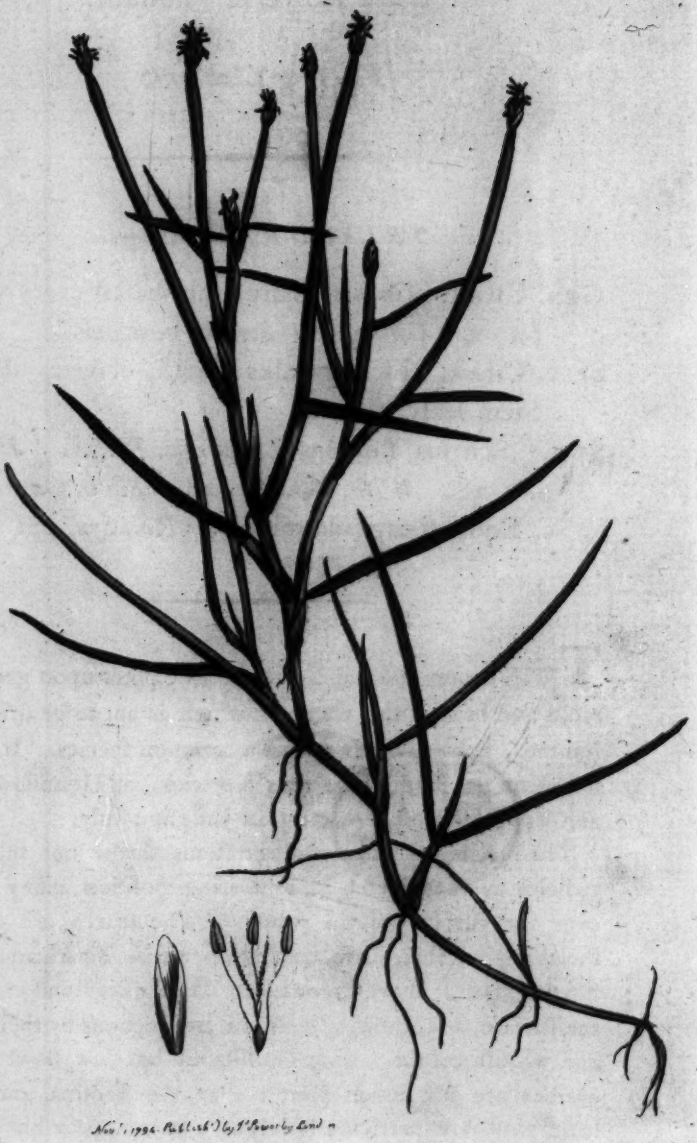
NOT very uncommon in ponds and ditches throughout England. The root has all the appearance of being perennial (though Linnæus marks it as annual), and ſeveral fibres are thrown out from the lower part of the ſtem, which is round, very ſlender, and alternately branched above. Leaves linear, very narrow, moſtly alternate, but oppoſite under every flower-ſtalk, ſeſſile, ſpreading from the very baſe, and not ſheathing the ſtem, their margin perfectly ſmooth and entire. Stipulæ membranous, lanceolate, inſerted above each leaf, and embracing the ſtem. Flower-ſtalks axillary, frequently terminal till the ſtem ſhoots beyond them, ſhorter than the leaves, each bearing a ſpike of 3 or 4 greeniſh flowers in the middle of ſummer.

The able authors of the *Bot. Arrangement* have in this inſtance not tranſlated the ſpecific character of Linnæus with their uſual accuracy. Neither do we conceive the ſcales mentioned in Dr. Withering's deſcription to be *bracteæ*, or belonging to the flower-ſtalks; it is evident, from an inſpection of the plant, they are real *ſtipulæ intrafoliaceæ*.

POTAMOGETON pusillum.

Small Pond-weed.





Nov.1, 1794. Published by J. Sowerby, Lond.n

SCIRPUS fluitans.

Floating Club-ruſh.

TRIANDRIA Monogynia.

GEN. CHAR. *Glumes* chaffy, imbricated every way, all fertile. *Cor.* none. *Seed* 1, beardleſs.

SPEC. CHAR. Flower-ſtalks round, naked, alternate. Stem leafy, flaccid.

SYN. Scirpus fluitans, *Linn. Sp. Pl.* 71. *Hudſ. Fl. An.* 18. *With. Bot. Arr.* 48. *Sibth. Oxon.* 23.
Sc. Equiſeti capitulo minori. *Raii Syn.* 431.

THIS occurs in ditches, and in little pools upon graſſy commons and heaths, the water of which is apt to be dried up in ſummer, but is by no means a common ſpecies. It may be found on St. Faith's bogs near Norwich, on Hounſlow Heath, and Epping Foreſt, flowering in June and July.

The root is perennial, and the ſtems throw out many long radicles as they ſtretch in a floating poſition many together over the ſurface of the water. The leaves are alternate, ſheathing at their baſe, and then much divaricated, partly floating, partly above the water. The ſpikes ſtand erect above the ſurface, and, though ſmall, are conſpicuous by their number and whitiſh colour. Each conſiſts of but few flowers, whoſe glumes are not much ſhorter than the ſtamina, and the two lowermoſt are particularly large, ſo as to appear like bracteæ; but they have always parts of fructification belonging to them. The ſtigmata are only two in number.

G.R. III.
BRITISH MUSEUM

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Note, The Orobanche ramoſa, tab. 184, is drawn from a ſpecimen whoſe root had been wounded by ſome inſect, and is therefore more ſwelled than in its natural ſtate. *Mr. Woodward.*

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